Department of Natural Resources and Mines,
Manufacturing, and Regional and Rural Development

Cadastral Survey Requirements

Version 8.02

20 January 2025

SIG/2021/5792

Queensland Government

This publication has been compiled by Surveying Services of Lands Division, Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development.

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Document status:

Standards under the *Survey and Mapping Infrastructure Act 2003*

The Standards under the *Survey and Mapping Infrastructure Act 2003* which are contained in this document were made by the chief executive on 20 December 2024, by Kenneth Sherwood, Director of Surveys, delegate of the chief executive for section 6, under the current Survey and Mapping Infrastructure Act Delegation.

The standards take effect on 20 January 2025.

Guidelines under the *Survey and Mapping Infrastructure Act 2003*

The guidelines under the *Survey and Mapping Infrastructure Act 2003* which are contained in this document were made by the Chief Executive on 20 December 2024, by Kenneth Sherwood, Director of Surveys, delegate of the chief executive for section 7, under the current Survey and Mapping Infrastructure Act Delegation.

The guidelines take effect on 20 January 2025.

The publishing of the standards and guidelines was approved by the chief executive on 24 December 2024, by Mark Gordon, Acting Executive Director, Land and Surveying Services, delegate of the chief executive for section 10, under the current Survey and Mapping Infrastructure Act Delegation.

This document replaces the standards and guidelines made within the *Cadastral Survey Requirements* v8.01, which were in effect from 03 July 2023.

Amendment History

Showing changes since Cadastral Survey Requirements v8.01

Section amended	Amendment	Reason
Contacts and Links	Updated hyperlinks, Titles Queensland websites moved from 'Departmental websites' to 'Other websites', and the addition of the ELVIS web address.	Updated where hyperlinks have changed and addition of a web address for elevation data.
Departmental Policies and Links	Links to departmental policies for submitting survey information and completion of permanent survey mark plans added.	Ease of access to the policies via the hyperlinks.
Multiple Sections	Legislative references updated.	Updated where the title or section numbers of relevant Acts or Regulations have changed.
Multiple Sections	• Hyperlinks to the Titles Queensland website updated. • References to the Registrar of Titles Directions for the Preparation of Plans (RTDPP) updated. • References to the titles registry and land registry amended. • References to the department updated.	• Updated where hyperlinks have changed. • Updated where new sections of the RTDPP have been referenced. • Syntax and phraseology updates. • Machinery of government change to department name.
Multiple Sections	Administrative updates to document formatting and cross-references between relevant sections.	Formatting of document updated for consistency in referring to section numbers.
Multiple Sections	References to departmental policy numbers updated.	Updated policy numbers or hyperlinks where policy documents have changed.
1.3 *Definitions and conventions*	Amended to add definition for 'Registrar of Titles'.	Functions of the Registrar of Titles have been delegated to the titles registry operator, being Titles Queensland, under authority of the *Queensland Future Fund (Titles Registry) Act 2021*.
1.7 *Exemptions - Departure from standards*	• Additional example provided as guidance for when multiple exemptions apply, and information is updated to include survey reporting requirements under section 3.37 *Survey Reports*. • New information about the requirement of separate approvals for exemptions from standards and the *Registrar of Titles Directions for the Preparation of Plans*.	• The survey plan must include the exemptions approved and the specific boundaries or stations to which each exemption applies on a statement on the face of the plan or in the survey report. • If an exemption is required from the Registrar's Directions, an application will need to be made to the Registrar of Titles via Titles Queensland. Should an exemption be granted, the written approval is to be supplied with the survey plan when it is lodged for registration.
2.3 *Administrative boundaries – State, local government, and locality*	• Addition of cross-reference to requirement to contact the department for surveys involving the State boundary.	• Any survey activity involving the state border should be referred to the department for survey advice and coordination of the survey activity with the adjoining jurisdiction.

Section amended	Amendment	Reason
	• Amended to clarify that showing the local government or locality boundary is optional when it is located within an adjoining feature.	• Technical clarification to remove ambiguity.
2.12 *Withdrawn plans*	Addition of reference to the relevant section of the Land Title Practice Manual (Queensland).	Reference provided to include source of the information.
2.14 *Submitting survey information to the department*	New standard for submitting survey information to the department.	The method for submission of information is to be in accordance with departmental policy: *Submitting survey information under the Survey and Mapping Infrastructure Act 2003 SIG/2021/5860*.
2.15 *Alteration to deposited survey plans prior to lodgement*	New standard requiring submission of a new version and an annotated copy of the plan for any amendments to deposited survey plans.	Technical clarification to avoid ambiguity.
3.4.2 *Measurement accuracy*	Addition of 'or better' to survey uncertainty of 10 millimetres + 50 ppm.	Technical clarification of accuracy specifications.
3.5 *Adjoining information*	Text amended to reference presentation requirements for administrative boundaries and the Queensland State border.	Alignment of standard with sections 2.3 *Administrative boundaries* and 5.4 *Border surveys*.
3.6.1 *Calculated areas*	• Amended to incorporate identification surveys. • Added requirement where a calculated area is shown, the relevant land should be fully dimensioned.	• An identification survey of an entire parcel may show an area. However, a combination of the surveyed area and deed area must not be shown. Any discrepancies between the surveyed and title areas can be addressed in the survey report. • The calculated area of any parcel, including closed road, should be able to be calculated from the dimensions shown on the plan.
3.6.5.2 *Dealing with multiple areas of road*	Amended to include multiple areas of closed road.	Standard rewritten to extend application to multiple areas of closed road.
3.8 *Cancelling clause*	• Paragraphs that are specific to the requirements of the RTDPP have changed status from a survey standard to information. • Amended to remove historical information.	• These paragraphs are provided for information only. • Undescribed balances of lots cannot be created or perpetuated without prior approval from the Registrar of Titles.
3.9 *Certification by surveyor*	New paragraph added referring to certificate of amendment or amendment to surveyor's certificate on identification surveys.	Technical clarification to include identification survey plans.
3.10.3.1 *Exchange deed of grant with a lease, reserve or trust land*	Standard amended to clarify that one plan is used where part of a deed of grant is exchanged with part of a lease, reserve or trust land.	Technical clarification.

Section amended	Amendment	Reason
3.13 *Connection of surveys and detached lots*	• Amended to include doughnut parcels and references inserted to relevant sections. • Addition of 'at least' to the connection requirements.	• The standard as previously written did not include the scenario of doughnut parcels. • The requirement also applies to lots separated by vincula and part lots. • Clarification that the minimum requirement is to show two separate connections, but more may be shown.
3.14.1 *Coordinates—General*	Information added to clarify the prospective implementation of GDA2020.	Technical clarification.
3.18 *Dimensions*	• Standard amended to sufficiently cover identification surveys. • Standard amended to clarify that every line should only show one bearing.	• Identification surveys are dimensioned similarly to plans of subdivision. • Showing two different bearings on a line is confusing, i.e. 270°0' Orig., Reads 269°59' is not compliant.
3.20.2 *Encroachments*	• Standard amended to clarify that for compiled boundaries, if an existing encroachment or improvement is still extant at the time of survey and has relevance to the action or any future action, the encroachment or improvement should be compiled and shown. • Text moved from 3.20.3 *Notifications* to 3.20.2 *Encroachments*.	• It is the cadastral surveyor's responsibility under the SMI Regulation to ensure that any encroachments or improvements that may affect future dealings are appropriately identified and shown on the survey plan. • The paragraph is more relevant to encroachments than to notifications.
3.20.3 *Notifications*	Standard amended to clarify the notification requirement for reinstated subject parcel boundaries.	Amended for consistency with the SMI Regulation.
3.21 *Identification surveys*	• Standard amended to clarify the requirements for identification surveys. • Amended the minimum plan requirements for identification survey plans. • A calculated area may be shown for an identification survey which identifies an entire parcel.	• To enable consistent application of standards to identification surveys. An identification survey is a cadastral survey and as such, all standards of the CSR apply unless specifically excluded. • To improve the consistency of identification survey plans by clarifying the relevant plan presentation requirements. • An identification survey represents the best dimensions for where the boundaries have always been, and the area should be based on these dimensions.
3.21.2 *Preservation of Survey Infrastructure (POSI)*	New standard and information about the use of POSI surveys.	POSI surveys are necessary where there is potential for cadastral survey marks to be destroyed.
3.21.3 *Amendments to identification surveys*	New standard to set out the process of amending identification survey plans.	Process to amend identification surveys is shifted from the RTDPP to the survey standards.

Section amended	Amendment	Reason
3.23.1 *Boundary marking*	• Standard amended to clarify the requirements applicable to new or existing corners. • Standard amended to clarify that the requirement to provide alternate marking and description and diagram for unmarked corners applies to subject corners only.	Technical clarification to remove ambiguity.
3.23.3 *Cadastral survey marks*	Replacement of cadastral 'reference' mark with 'survey' mark to clarify that options outlined may apply to either boundary or reference marking.	Technical clarification.
3.24 *Meridian*	Standard amended to clarify connection to datum requirements for surveys that connect to PSMs with datum lineage.	The requirement to meet connection to datum requirements for any survey that connects to PSMs with datum lineage coordinates is triggered only if the PSM connections are used to obtain MGA meridian.
3.28 *Permanent survey marks and connection to datum*	Additional information about the definition and benefits of connection to datum.	Clarification of the intention behind the standard.
3.28.1 *Connection to datum*	• Amended to clarify application of requirement to identification surveys. • Amended to clarify the term ‘underlying plan’ meant a previous survey over the subject land.	• Technical clarification. • The reference to ‘underlying plan’ was ambiguous and required clarification.
3.31 *Public use land*	Standard amended to reflect changes to the *Land Act 1994* and *Land Title Act 1994* resulting from the *Land and Other Legislation Amendment Act 2024*.	Technical clarification to align with relevant legislation.
3.32 *Redrawn plans*	Information amended to clarify application to identification surveys and deposited plans.	Technical clarification.
3.33.1 *Cadastral Reinstatement Standard*	The cadastral reinstatement standard is amended to remove an exception for plans of subdivisions of existing building format lots.	Building format plans create primary interests and explanations for reinstatement decisions made will assist future surveyors and Titles Queensland.
3.36 *Resurveys*	• Standard amended to require that a plan of resurvey must include a survey report. • Amended to include the requirement of the Registrar of Titles for removal of a conditional consent.	• A survey report must be used to explain the reasoning for conducting a resurvey. • If a lot being resurveyed is subject to conditional consent, a Local Government removal/waiver letter must be lodged with the plan.
3.37 *Survey reports*	Amended to clarify mandatory and optional requirements for survey reports.	Survey reports must state the exemptions from standards used and explain why. A list of the relevant plans or documents obtained as search material is desirable but not mandatory.

Section amended	Amendment	Reason
3.37.1 *Survey records*	Amended to clarify the process of submitting survey records to the department.	Survey records should be submitted to the department and not to Titles Queensland.
3.38 *Surveys using remotely sensed data*	Reference to 'the Titles Registry' has been removed.	Survey standards relate to requirements of the chief executive under the SMI Act.
3.39 *Town reserves and pasturage reserves*	• Standard heading amended. • Standard amended to clarify that prior approval of the Registrar of Titles must be sought for any undescribed balances, and the relevant direction of the RTDPP referenced.	• To optimise keyword searching. • Clarification of the requirements for undescribed balances.
3.44 *Vincula*	Standard amended to ensure consistency between the CSR and the RTDPP.	According to Titles Queensland, plotting parcels or part parcels to scale alone is ambiguous and does not satisfy the requirements under RTDPP 4.8 (unambiguous relative location).
3.45 *Part lots*	Amended to clarify the requirements applicable to part lots.	Vincula and part lots have separate requirements.
4.1.1 *Determining relevant provisions*	• Amended to provide additional resources to surveyors in determining the location of a physical feature boundary. • Additional information to explain the concepts of source material and new source material.	• Addition of Elevation Information System (ELVIS) information. • Clarification of content related to source material for land.
4.2 *Surveying tidal and non-tidal water boundaries*	Amended to clarify that new source material must unambiguously describe the feature that represents the water boundary and that a station symbol must not be shown at the intersection of the right-line boundary and the water boundary.	Technical clarification.
4.3.1 *General plan presentation requirements*	New subsection created to separate general plan presentation requirements from the rules regarding compilation of water boundaries.	Improved visibility of plan presentation requirements for compiling water boundary information.
4.5.1 *Plans of survey*	Amended to clarify lake boundaries and the reporting requirements for identification surveys that deal with water boundaries.	Technical clarification.
4.5.2 *Plans with compiled water boundary information*	Amended to exclude surveys of exempt land and reserved plans of survey from the compilation rules applicable to new plans of survey.	The 'old rules' apply to surveys of exempt land and reserved plans of survey, which do not need to comply with additional requirements for new plans of survey.
4.5.3 *Identification surveys as source of water boundary information*	Additional information provided about the use of identification surveys as a source of water boundary information.	To outline the conditions that need to be satisfied for identification surveys to be used as a source for compilation.

Section amended	Amendment	Reason
4.7 *Preparation of a reserved plan of survey*	Amended to clarify that a reserved plan of survey cannot be prepared after any other new plan of survey is registered for the land, which includes a plan of new source material.	Technical clarification.
4.16 *Identification survey plans involving a water boundary*	Additional information about survey and plan presentation requirements for identification surveys that deal with water boundaries.	• Identification surveys that locate the current location at law of a water boundary must satisfy all the relevant standards as other plans of survey. • It is not desirable to display both a previously surveyed and the current location of a water boundary on the face of an identification plan, as this is confusing for users.
4.17 *Other natural features as boundaries*	Amended to insert 'physical' in between the words 'natural features'.	Added to optimise keyword searching.
5.4 *Border surveys (State border of Queensland)*	Amended to clarify the process for State border surveys.	The department must be consulted for all surveys relating to the State border to obtain survey advice and to facilitate the approval process with the adjoining jurisdiction.
5.8 *Easements*	Change in status from survey standard to information. Amended to reflect changes to legislation and the Land Title Practice Manual.	Provided for information only, and out of date information has been removed.
5.14 *Local government approval*	Amended to replace the term 'local government' with 'relevant planning body' to ensure consistency with relevant legislative frameworks.	To align with terminology used by relevant legislation, the Land Title Practice Manual and the RTDPP.
8.4.2 *Testing quality of Real-Time GNSS measurements and their suitability for cadastral purposes*	• Title of standard amended to reflect that testing refers to 'Real-Time' GNSS observations, for both classic Base/Rover and Network RTK. • Revised testing methodology and outlier test formulae.	Outlier tests now conform to JCGM 100:2008, *Evaluation of Measurement Data – Guide to the Expression of Uncertainty in Measurement*, Joint Committee for Guides in Metrology – Bureau International des Poids et Mesures, Paris, France.
8.4.3.3 *Guidance on the use of GNSS to orient total station surveys*	Clarification of guideline about the use of GNSS for meridian to meet the accuracies required under standard 3.4.2 *Measurement Accuracy* and 3.24 *Meridian*.	Clarified that the GNSS positional uncertainties must meet both the distance and meridian accuracy standards.
9.2 *Action statements*	Amended to provide cross-reference to section 3.6.1 *Calculated areas*.	The area of a new or closed road must be determined by the requirements of section 3.6.1 *Calculated areas*.
9.15.1 *General guidelines*	Amended to clarify that the use of other logical descriptions for corner information is to be addressed in the survey report.	It is preferred that the general terminology referred to in the guideline is used.
9.15.3.1 *Original reference marks*	Amended to clarify the use of "not searched", "new conn", "new ref" and "noted and checked".	Technical clarification to remove ambiguity.

Section amended	Amendment	Reason
9.15.4.1 *Occupation at original corners*	Amended to provide additional guidance on the presentation of original occupation when the origin is known.	Technical clarification of presentation requirements to show original occupation.
9.34 *North point and data orientation*	Section changed from information to a survey standard, so the requirement to show a north point applies to all plans, including identification surveys.	Each plan must show a north point.
9.38 *Original grants*	Amended to clarify the requirement to show original grants does not apply to identification surveys.	The purpose of showing original grants for freehold land is to ensure correct title allocation. An identification survey does not update or amend title allocations and could only represent the information already shown on the title.
9.43 *Roads*	Additional information about considering the requirements of a relevant authority when surveying roads.	Surveyors should be aware that the requirements of the Department of Transport and Main Roads or a local authority may impact their survey.
9.55 *Plan presentation*	• Amended to clarify that plan presentation must also be consistent with requirements of the RTDPP. • Esplanade widths removed from Figures 10-1 and 10-2.	• Clarification for lodged plans to comply with the RTDPP. • Surveyors should not be showing the original esplanade width unless it has been confirmed that the physical feature boundary on the seaward side of the esplanade is in the same position.
10.5.1 *Esplanades*	Amended to clarify reference to applicable case law for esplanade boundaries.	Technical clarification.
Appendix A *Glossary*	Glossary amended to add entries for 'parcel', 'Positional Uncertainty (PU)', 'Relative Uncertainty (RU)', 'Root Mean Squared Error (RMS or RMSE)' and 'Survey Uncertainty (SU)'.	• A definition for the term 'parcel' is required as it is referenced multiple times in the CSR. • The terms and abbreviations used in Chapter 8 *Surveys using Global Navigation Satellite Systems (GNSS)* require definition or further explanation in the glossary.
Appendix B *Abbreviations* - B.6 *Commonly used plan abbreviations*	• Addition of 'Retaining Wall – Ret Wall' to the list of commonly used plan abbreviations. • Replacement of abbreviation for 'PARADE' from 'PAR.' to 'PDE'.	• Improvements on or near the boundary typically include retaining walls. • 'PDE' is the most accepted abbreviation used by local authorities and surveyors.
Appendix F *Reports* – F.2 *Water boundary reports*	Information about relevant provisions for identification surveys is included, and the example water boundary reports provided.	The relevant provisions for identification surveys are clarified and additional guidance about the application of legislation is provided.
Appendix G *Land Services – General Contact List*	List of email addresses for the local departmental offices of Land Services is updated.	Updated for changes to contact information.

Note to surveyors:

This document does not contain the specific requirements for mining tenure surveys. See the surveying standards page on the government's Business Queensland website.

Contacts and Links

Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development

Contacts

The department can be contacted for surveying matters through the various channels shown on the departmental webpage <www.nrmmrrd.qld.gov.au/contact-us#surveying>.

Useful web addresses

Departmental websites:

Home page <www.nrmmrrd.qld.gov.au/home>

Surveying <www.business.qld.gov.au/industries/building-property-development/surveying>

Surveying Alerts <www.business.qld.gov.au/industries/building-property-development/titles-property-surveying/surveying/alerts>

Policies under the provisions of the *Land Act 1994* <www.nrmmrrd.qld.gov.au/about-us/policies>

Queensland Globe <www.business.qld.gov.au/running-business/support-assistance/mapping-data-imagery/queensland-globe>

QSpatial <www.business.qld.gov.au/running-business/support-assistance/mapping-data-imagery/data/qspatial>

QImagery <www.business.qld.gov.au/running-business/support-assistance/mapping-data-imagery/imagery/qimagery>

Other websites:

Surveyors Board of Queensland <www.sbq.com.au/>

Queensland legislation <www.legislation.qld.gov.au/>

Titles Queensland <www.titlesqld.com.au/>

Titles Queensland Alerts <www.titlesqld.com.au/manual-guides/titles-queensland-alerts/>

Registrar of Titles Directions for the Preparations of Plans <www.titlesqld.com.au/plans-sketches/>

Land Title Practice Manual (Queensland) <www.titlesqld.com.au/manual-guides/land-title-practice-manual/>

ELVIS - Elevation and Depth - Foundation Spatial Data <www.elevation.fsdf.org.au/>

Departmental Policies and Links

Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development policies referenced in this document.

Policy Title	Policy Link
Queensland Parcel Identification Standard SIG/2013/396	www.resources.qld.gov.au/?a=109113:policy_registry/parcel-identification_standard.pdf
Administrative Plans SIG/2013/571	www.resources.qld.gov.au/?a=109113:policy_registry/administrative-plans.pdf
Large Scale Land Development Surveys SIG/2016/3409	www.resources.qld.gov.au/?a=109113:policy_registry/large-scale-land-development-surveys.pdf
Renewal or conversion of a term lease SIG/2017/3553	www.resources.qld.gov.au/?a=109113:policy_registry/renewal-or-conversion-of-a-term-lease.pdf
Conversion of perpetual leases to freehold SIG/2017/3555	www.resources.qld.gov.au/?a=109113:policy_registry/conversion-of-perpetual-leases-to-freehold.pdf
Cadastral Survey Requirements SIG/2021/5792	www.resources.qld.gov.au/?a=109113:policy_registry/cadastral-survey-requirements.pdf
Conversion of leasehold tenure SLM/2013/397	www.resources.qld.gov.au/?a=109113:policy_registry/conversion-leasehold-tenure.pdf
Easement SLM/2013/410	www.resources.qld.gov.au/?a=109113:policy_registry/easement.pdf
Creation of trust land SLM/2013/479	www.resources.qld.gov.au/?a=109113:policy_registry/creation-trust-land.pdf
Public Purpose Reservations SLM/2013/480	www.resources.qld.gov.au/?a=109113:policy_registry/public-purpose-reservations.pdf
Issue of tenures to a Port Authority/Corporation SLM/2013/582	www.resources.qld.gov.au/?a=109113:policy_registry/tenures-to-port-authority-corporation.pdf
Roads under the Land Act 1994 SLM/2013/725	www.resources.qld.gov.au/?a=109113:policy_registry/roads-under-land-act.pdf
Plan requirements for state land dealings SLM/2013/1069	www.resources.qld.gov.au/?a=109113:policy_registry/plan-requirements-state-land-dealings.pdf
Submitting survey information under the Survey and Mapping Infrastructure Act 2003 SIG/2021/5860	www.resources.qld.gov.au/?a=109113:policy_registry/submitting-survey-plans-under-smia.pdf
Completion of Permanent Survey Mark Plans SIG/2013/427	www.resources.qld.gov.au/?a=109113:policy_registry/completion-permanent-survey-mark-plans.pdf&ver=1.07

Contents

Tables

Figures

1 Introduction

1.1 Legislation

The *Survey and Mapping Infrastructure Act 2003* provides for the making of standards and guidelines for achieving an acceptable level of survey quality (section 3(2)(a)).

1.2 Authority for standards and guidelines

Section 6(1) of the *Survey and Mapping Infrastructure Act 2003* states that the chief executive may make written standards for surveying, and section 7(1) states that the chief executive may make written guidelines for surveying.

1.3 Definitions and conventions

Standard under the SMI Act

See Appendix A *Glossary*, page 166.

The following definitions apply to all material (standards, guidelines, and information) in this document:

accuracy, when used without qualification, means accuracy of measurements expressed at the 95% confidence level.

CORS, means a continuously operating reference station with a Geocentric Datum of Australia (GDA) lineage of datum recorded in the Survey Control Register.

department, when used without qualification, means the department administering the SMI Act[1].

personal signature, means the actual signature by the person whose signature is required on the document. Unless otherwise specified, a document requiring a Personal Signature may be submitted by an actual original "wet ink" signature on hard copy, or a PDF or other electronic image of an actual signature, but cannot be submitted by an electronic signature within the meaning of the *Electronic Transactions (Queensland) Act 2001*.

physical feature boundary, of land, means a boundary of the land whose location follows a physical feature, either natural or artificial, that:

- exists now; or
- used to exist, and no longer exists.

Registrar of Titles, means the Registrar of Titles under the *Land Title Act 1994*. Functions of the Registrar of Titles have been delegated to the titles registry operator, being Titles Queensland, under the authority of the *Queensland Future Fund (Titles Registry) Act 2021*.

Registrar's directions, means the Registrar of Titles Directions for the Preparation of Plans.

SMIA or *SMI Act* means the *Survey and Mapping Infrastructure Act 2003*.

water boundary, of land, means a physical feature boundary that is a tidal boundary or a non-tidal boundary under Part 7 of the SMI Act.

The following conventions apply to interpretation of this document:

###	where a specification or an example requires the insertion of a particular number (e.g. a lot number; plan number; dealing number; mining claim number) the number is represented in the specification as '#' symbols
XXX	where a specification or an example requires the insertion of a particular name (e.g. a road; creek; river) the name is represented in the specification as 'X' symbols.

Standards and guidelines under the *Survey and Mapping Infrastructure Act 2003* are identified respectively in the document, with standards being designated as 'Standard under SMI Act' and guidelines being

[1] Currently the Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development

designated as ‘Guideline under Standard [section number of the standard], [section title of the standard]. Where a number of subsections form part of the same standard or guideline, each subsection is not separately identified as such (e.g. if, under section 3.3, there are subsections 3.3.1, 3.3.2, 3.3.3, 3.3.3.1 and 3.3.3.2, and each of these is a ‘standard’, only 3.3 will be identified as being a ‘standard’, as 3.3 encompasses all of its subsections).

1.4 Application of standards

Standard under the SMI Act

Section 6(2) of the *Survey and Mapping Infrastructure Act 2003* requires that a survey standard must state the area and type of survey to which it applies. Each survey standard and survey guideline in this document applies to cadastral surveys. Unless indicated otherwise, each survey standard and survey guideline applies in the area administered by the State of Queensland.

1.5 Compliance with standards and guidelines

Information

Standards and guidelines made by the chief executive under the *Survey and Mapping Infrastructure Act 2003* are identified as such in this document.

Section 13 of the *Survey and Mapping Infrastructure Act 2003* requires surveyors to comply with the relevant standards.

The Act states that survey guidelines are ‘ways of complying with survey standards’ (section 7), and states in section 14 that:

> *‘A surveyor, surveying associate or surveying graduate may comply with a survey standard by adopting and following—*
>
> *(a) the ways stated in a survey guideline for complying with the survey standard; or*
>
> *(b) other ways that achieve an equal or better level of compliance.’*

The implication of this is that, while compliance with guidelines is not compulsory and may be adopted at the professional discretion of the surveyor, if a surveyor chooses to adopt a different approach, then the onus is on the surveyor to be able to demonstrate that the approach is capable of achieving the relevant standard.

1.6 Review

Information

Persons wishing to comment on the appropriateness of these standards are invited to provide comments in writing. In such cases, please consider submitting an alternative to the current standard, to assist the process of ongoing review of the standards.

1.7 Exemptions - Departure from standards

Standard under the SMI Act

See section 3.37 *Survey reports*, page 64.

A surveyor may use any method and/or equipment in performing a survey where it can be demonstrated that such method and/or equipment is capable of achieving the survey standard.

Sections 18 to 20 of the *Survey and Mapping Infrastructure Act 2003* provide a mechanism for exemption from the standards, by application to the chief executive.

The grounds for seeking an exemption are set out in subsection 18(1): “If a surveyor, surveying associate or surveying graduate reasonably believes it is impractical for the person to comply with a survey standard for a particular survey”.

Subsection 18(2)(b) requires applications to address this point: "as briefly as possible, explain why the person believes it is impractical for the person to comply with the survey standard for the survey".

As section 13 of the *Survey and Mapping Infrastructure Act 2003* requires surveyors to comply with the relevant standards, a survey plan is taken to be in compliance with all relevant standards. Therefore, where an exemption has been given for a survey, the plan must include a statement on the plan (preferably on sheet 1) indicating which standard/s the survey was exempt from. The statement must state the name and number of the standard that the plan is exempt from, and the specific boundaries or stations that it applies to, if applicable. For example:

> *Survey exempt from Standard 3.28.1 (Connection to Datum).*
>
> *Survey exempt from Standard 3.23 (Marking) in relation to stations 21-37, 45-56 and 77-98.*
>
> *Survey exempt from Standard 3.34.2 (Specification for surveys of land in remote areas) in relation to calculated traverse and boundary lines represented on Sheets 1, 3, 4 & 6 and 4.2 (Surveying tidal and non-tidal water boundaries) in relation to the tabulation of tidal boundary points.*

Where an exemption has been granted, the survey report must also include the exemptions approved and the specific boundaries, stations or elements of the survey to which each exemption applies unless already included in the statement on the face of the plan in accordance with section 3.37 *Survey reports*.

Where the department has provided a Survey Advice file reference in the exemption approval correspondence, that file reference should be noted on the plan in the Surveyor file reference item on the plan administration sheet (sheet 2).

Information

Plans of survey that are lodged in the land registry are also required to comply with the *Registrar of Titles Directions for the Preparation of Plans*. If an exemption is required from the Registrar's Directions, an application will need to be made to the Registrar of Titles via Titles Queensland. If an approval is granted by the Registrar of Titles, the written approval is to be lodged with the survey plan.

1.8 Purpose of this document

Information

See section 1.5 *Compliance with standards and guidelines*, page 2.

This document sets out a range of information that surveyors may require in relation to the conduct of cadastral surveys. It includes:

- standards under the *Survey and Mapping Infrastructure Act 2003*;
- guidelines under the *Survey and Mapping Infrastructure Act 2003*;
- specific requirements related to actions under other legislation;
- information about the operation of other legislation;
- information of historical practices and requirements.

1.8.1 Standards and guidelines under the *Survey and Mapping Infrastructure Act 2003*

Standards and guidelines under the *Survey and Mapping Infrastructure Act 2003* are identified respectively in the document.

1.8.2 Requirements of other legislation

In addition to the standards and guidelines issued under the *Survey and Mapping Infrastructure Act 2003*, this document contains information about the operation of other legislation. Where the text is simply a description of the operation of that legislation, it is shown as an 'information' item. Such information is included for general advice and guidance only. However, if the item spells out specific requirements with which surveyors must comply in relation to that legislation, then the item is shown as a 'standard' in relation to that legislation, (e.g. 'Standard under the Land Act').

2 General

2.1 Access restriction strips

Standard under the Planning Act

See the *Land Title Practice Manual (Queensland)*, clause 1-2570.

Access restriction strips are no longer acceptable as a condition on a plan under the provisions of section 66 of the *Planning Act 2016*.

2.2 Administrative advices

Information

See the *Land Title Practice Manual (Queensland)*, Part 52.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 22.6.9 'Existing administrative advices'.

An administrative advice is a noting, placed on a file attached to the register, of a present or future action or condition, affecting the subject title, to alert interested parties searching the register, of such action or condition. The administrative advice is usually authorised by statute, but is not a registrable estate or interest in, or charge on the subject land.

The objective of administrative advices is to provide the mechanism to alert registered owners and other interested parties to the existence of matters affecting land under the provisions of:

- Queensland legislation including:
  - the *Acquisition of Land Act 1967*
  - the *Land Title Act 1994*
  - the *Land Act 1994*
  - the *Queensland Building and Construction Commission Act 1991*
  - the *Survey and Mapping Infrastructure Act 2003*
- other determinations by government
- other determinations by interested parties.

While these advices do not encumber the title of the land they may prevent the registration of a dealing.

Interested parties are to be alerted to any advice of an administrative nature by a noting in the register.

Where a certificate of title is found to be in error due to incorrect survey information, the Registrar of Titles may enter an administrative advice over the title and notify the registered owner that a survey plan will be required to register future dealings.

The *Land Title Practice Manual (Queensland)* contains a full listing of acceptable administrative advices (clause 52-2000).

Further information relating to these advices should be obtained from the relevant authority.

2.3 Administrative boundaries – State, local government, and locality

Standard under the SMI Act

See section 5.4 *Border surveys (State border of Queensland)*, page 92.
See section 9.28 *Linework*, page 141.
See section 9.29 *Locality*, page 142.
See section 9.46 *State boundary*, page 149.
See the *Registrar of Titles directions for the preparation of plans*, Direction 22.7 'Local government allocation'.
See part 6 of the *Survey and Mapping Infrastructure Act 2003*.

State, local government and locality boundaries must be shown on survey plans where they intersect or adjoin the subject lot. For the State boundary, the adjoining State or Territory is to be labelled and the department must be contacted for survey advice and coordination of the survey activity with the adjoining jurisdiction. Local government and locality areas adjoining the subject land are to be labelled. Where the subject land is within multiple local government areas or localities, labels are required on each side of the administrative boundary as appropriate. Where multiple administrative boundaries are coincident, only the linework for the highest order administrative boundary is to be shown. Where a local government or locality boundary is located within an adjoining feature, such as the centreline of a watercourse, road or railway, the boundary may be shown.

Administrative boundaries require gazettal for any change to their location. If an administrative boundary coincides with a lot boundary, the location of which is subsequently changed, the administrative boundary does not change and must therefore retain its original location.

2.4 Adverse possession

Information

See the *Land Title Practice Manual (Queensland)*, clause 14-2290.

Adverse possession cannot be claimed against State land (section 6(4) of the *Limitation of Actions Act 1974*).

For adverse possession of freehold land see Part 6, Division 5 of the *Land Title Act 1994*.

2.5 Commonwealth titles

Information

For historical information, see section 11.5 *Commonwealth titles*, page 161.

Under section 207 of the *Land Title Act 1994*, the *Real Property (Commonwealth Titles) Act 1924* was repealed.

Any Commonwealth-acquired land can now be brought under the provisions of the *Land Title Act 1994* by lodgement of an application by the Commonwealth Government solicitor.

If no plan of the land exists in the land registry, a plan suitable for registration under the *Land Title Act 1994* is required to be lodged accompanying the application. An indefeasible title is created in the name of the Commonwealth of Australia on registration of the plan and application (*Land Title Act 1994*).

This process applies to any Commonwealth-acquired land, whether it was acquired as Commonwealth-transferred land in 1901 or has been acquired subsequently through resumption.

State leasehold land can be acquired by the Commonwealth and brought under the *Land Title Act 1994* by this process.

2.6 *Land Title Practice Manual* (Queensland)

Information

A manual prepared by the Registrar of Titles, which gives detailed information on forms and subject areas which impact on titling transactions. Each section that relates to a form sets out the requirements of the forms, completed examples, Titles Registry practice, the relationship to legislation, and summaries of relevant case law. The manual is available on the Titles Queensland website, <www.titlesqld.com.au/manual-guides/land-title-practice-manual/>.

2.7 *Registrar of Titles Directions for the Preparation of Plans*

Information

A set of directions prepared by the Registrar of Titles under section 50 of the *Land Title Act 1994*. While a significant part of the directions relate to actions under the provisions of the *Land Title Act 1994*, the directions relate to any plan lodged in the Titles Registry. The directions are available on the Titles Queensland website, <www.titlesqld.com.au/plans-sketches/>.

2.8 Rejected plans

Information

See section 157 of the *Land Title Act 1994*.
See section 306 of the *Land Act 1994*.
See the *Land Title Practice Manual (Queensland)*, clause 60-0000.

The Registrar of Titles may reject a lodged plan under section 157 of the *Land Title Act 1994*. A rejected plan may be relodged but will be regarded as a new plan in all respects.

2.9 Reservations in title

Standard under the Land Act

See section 3.6.4 *Multiple line areas*, page 15.
See section 3.35.7.1 *Resumption of possession of reservation in title*, page 63.
See section 5.9 *Forest entitlement areas (FEAs)*, page 94.
See section 9.43 *Roads*, page 147.
See section 10.5 *Existing roads*, page 157.
See departmental policy *Land allocation: public purpose reservations SLM/2013/480*,
<www.resources.qld.gov.au/?a=109113:policy_registry/public-purpose-reservations.pdf>.

2.9.1 New reservations

Section 23 of the *Land Act 1994* allows the creation of a reservation for public purposes.

Sections 159 and 167 also refer to reservations for environmental or nature conservation purposes. The location of a reservation for this purpose must be defined. It is not a 'floating' reservation.

The location of the reservation must be at the same survey status as the subject parcel. A new plan will be required showing both the lease and the new reservation.

2.9.2 Existing reservations

See sections 23A, 24, 25, 26 and 26A of the *Land Act 1994*.
See the *Land Title Practice Manual (Queensland)*, clause 21-2190.

Information

During settlement of the State, reservations for public purposes were often provided for in freehold and leases for possible future public requirements.

The first type of reservation was for esplanade purposes as early communication and transport was by sea and boat - usual practice was for a reservation of a strip of land 100 feet wide above high water mark for esplanade purposes. However, most of these reservations were excluded from the grant, rather than reserved from the grant.

As with esplanade reservations, the practice of making road reservations also originated in New South Wales. Early grants from about 1826 onward gave the Crown the right to take land for roads from the grant without compensation, when it was found necessary to make roads for public use.

This practice also extended to Queensland and it soon became apparent that future road requirements could not always be foreseen or the pattern of development reasonably anticipated. It was necessary to make provision for subsequent development and the future subdivision of vacant Crown land. For this purpose, surveyors were required to make provision for future roads by retaining within portions in certain cases a specified area of land for road requirements. The location of these reservations was undefined, i.e. a "floating reservation", and an area was reserved from the Deed of Grant as a reservation for future road purposes.

Over time, reservations for public purposes were also created to meet needs occurring at various times. The legacy of this practice is that today there are reservations for various purposes and with the changing times, many of these areas may never be needed for the purposes originally envisaged - although a road reservation is the most common form of reservation, there may be other reservations including for railway, telegraph etc.

A deed of grant, Deed of Grant in Trust (DOGIT) or lease issued under a *Land Act* may be issued containing a reservation for a public purpose. The deed, DOGIT or lease will disclose whether the reserve for public purposes is excluded from the grant or reserved from the grant. If it is excluded from the grant (see 10315187, 10750134, 12075064, 12456194 or 16028220), the reserve is not a reservation under section 23 of the *Land Act 1994*. If it is reserved from the grant (see 12057127, 17035225 or 10845032), the reservation may be in a fixed location or ‘floating’, but are predominantly ‘floating’. As some exclusions have been erroneously treated as reservations in title, the relevant deed, DOGIT or lease should be referred to for confirmation. Areas reserved from the grant (reservations in title) will include wording that indicates that the area is for a particular public purpose in the future.

Standard under the Land Act

The State is the only party that may deal with reservations in title and must do so in accordance with the *Land Act 1994*. This includes:

- allocating the reservation (section 23A);
- selling the reservation (section 24);
- disposing of the reservation (section 26A).

It is a policy of the department that, wherever possible, a reservation for a public purpose in a deed of grant or lease (a ‘reservation in title’) is to be extinguished, if it is decided by the department that the reservation is no longer needed. The policy applies to reservations in either a defined location or floating.

When a lot that is subject to a reservation in title (e.g. a road or railway reservation), is subdivided or the registered owner wishes to purchase the reservation, the reservation must be dealt with in accordance with departmental policy *Public Purpose Reservations SLM/2013/480*. In general terms the policy requires one of the following:

- purchase of the reservation by the registered owner without competition.
- an allocation of the reservation (only if it is not in a defined location) to one or more of the subdivision lots normally with a requirement to purchase at a later date. (The ability to allocate a reservation under section 23A only applies to floating reservations).

In both of the above cases, an application must be lodged via the senior land officer in the relevant local departmental office. See the table at Appendix G for the relevant email address of each local departmental office.

Since lots that are subject to reservation in title must have action taken to deal with the reservation, early application should be made to the department so that the necessary formalities can be completed without unduly delaying the registration of the survey plan. A decision on the reservation may be made using the subdivisional design plan. In most cases the department will require the applicant to purchase the reservation. However, if it is approved to allocate the reservation, the department will advise the applicant of its requirements in relation to the allocation of the reservation and the form of the allocation approval. Any approval must be signed by the departmental delegate prior to the lodgement of the plan in the land registry.

Where the approval is to be by way of a certificate on the plan, the certificate must be in the following form, as appropriate:

Where the reservation is to be allocated to a single lot in a subdivision:

> *The area ____ha reserved for _____ purposes in Lot ___ on _____ may be allocated to Lot ____ as shown hereon.*
>
> *Power exercised: Section 23A of the Land Act 1994*
>
> *_____(signature)* *_____*
>
> *(full name)* *Date*
>
> *(position title)*
>
> *a duly authorised delegate of the Chief Executive under the current Land Act (Chief Executive) Delegation*

Where the reservation is to be allocated to more than one lot in a subdivision:

> *Of the area ____ha reserved for _____ purposes in Lot ___ on _____, ____ha may be allocated to Lot ____ and ___ha may be allocated to Lot ____ as shown hereon.*
>
> *Power exercised: Section 23A of the Land Act 1994*
>
> *_____(signature)* *_____*
>
> *(full name)* *Date*
>
> *(position title)*
>
> *a duly authorised delegate of the Chief Executive under the current Land Act (Chief Executive) Delegation*

Where the approval is to be by way of a Form 18 authorisation, the plan must bear (preferable on sheet 2) an allocation notation in one of the following forms, as appropriate:

> *The area ____ha reserved for _____ purposes in Lot ___ on _____ may be allocated to Lot ____ as shown hereon.*
>
> *Of the area ____ha reserved for _____ purposes in Lot ___ on _____, ____ha may be allocated to Lot ____ and ___ha may be allocated to Lot ____ as shown hereon.*

Where the reservation is in a fixed location, there is no requirement for an allocation certificate to be shown on the plan.

Guideline under Standard 2.9 Reservations in title

When the reservation in title is being purchased, the presentation of the original survey plan will determine whether that original survey plan can be amended to reflect the change, or whether a new compiled plan will be required. The local departmental office will advise of the process required. This confirms the need to contact the local departmental office from the outset of the job. Refer to sections 23A, and 24 or 26A of the *Land Act 1994*.

Information

A floating reservation exists solely for the life of the subject title. If the title for the land is surrendered absolutely, or extinguished by any other means, the ownership of the land reverts to the State. In effect, the reversion extinguishes the reservation in title.

2.10 State land policies

Information

The government website provides access to departmental policies regarding dealings in State land, <www.nrmmrrd.qld.gov.au/about-us/policies>.

2.11 Withdrawal and relodgement of plans

Information

See the *Land Title Practice Manual (Queensland)*, clause 21-2130.

Withdrawal and relodgement of a plan under section 159 of the *Land Title Act 1994* or section 308 of the *Land Act 1994* does not affect the period of validity for local government approval, which remains valid if it was valid at the date of original lodgement.

2.12 Withdrawn plans

Information

See the *Land Title Practice Manual (Queensland)*, clause 60-0100.

A withdrawn plan may be relodged for registration. When a withdrawn plan is relodged, it is treated as a new plan in all respects.

2.13 Water allocation register

Information

See the *Land Title Practice Manual (Queensland)*, part 49.

As part of the implementation of the State's agenda for water reform, the *Water Act 2000* has provided for the creation of a new registry of personal property rights in water—the water allocation register. The instrument registered is called a water allocation.

The water allocation register operates within the Titles Registry as an adjunct to the service already provided by the Registrar of Titles. The Registrar of Titles has been appointed as the Registrar of Water Allocations. The register commenced on the 2nd June 2003. Title references commence at 46000001.

Once recorded on the register, water allocation holders and persons who have an interest will be able to lodge dealings and conduct searches in the same manner as now exists for the land titles register.

A lot and a plan number is required for the lodgement of a land dealing, the same format will also be used to identify water allocation related dealings. The Registrar will be using an Administrative plan (AP) reference for all the water allocations granted within a water plan area. The associated water allocations become 'lots' on that plan.

For example, for the Fitzroy Basin plan area, the plan number will be AP6829, for all allocations (or 'lots'). Water allocation 40 in the Fitzroy Basin plan area can be described on all the title dealing forms as being Lot 40 on AP6829. For the Burnett plan, the plan number will be AP6975. Water allocation 144 in the Burnett Basin plan area can be described on all the forms as Lot 144 on AP6975. Each water allocation will also have its own title reference number.

Other plans for water plan areas will be given AP plan numbers as they progress to draft status.

All water plan areas can be viewed on the water resource planning page of the government website, <www.business.qld.gov.au/industries/mining-energy-water/water/catchments-planning/water-plan-areas>.

2.14 Submitting survey information to the department

Standard under the SMI Act

See departmental procedure *Submitting survey information under the Survey and Mapping*

Infrastructure Act 2003 SIG/2021/5860,
<www.resources.qld.gov.au/?a=109113:policy_registry/submitting-survey-plans-under-smia.pdf>.

Survey information including plan and survey records are to be submitted to the department in accordance with the *Survey and Mapping Infrastructure Act 2003* and Survey and Mapping Infrastructure Regulation 2024. The method for submission of information is to be in accordance with departmental policy *Submitting survey information under the Survey and Mapping Infrastructure Act 2003 SIG/2021/5860*.

2.15 Alteration to deposited survey plans prior to lodgement

Standard under the SMI Act

See departmental procedure *Submitting survey information under the Survey and Mapping Infrastructure Act 2003 SIG/2021/5860,*
<www.resources.qld.gov.au/?a=109113:policy_registry/submitting-survey-plans-under-smia.pdf>.

All amendments to deposited survey plans prior to lodgement in the land registry require a new copy of the plan to be submitted to the department as a new version. This new version must be accompanied by an annotated copy of the plan that has the changes clearly highlighted.

3 Survey

3.1 *Aboriginal Land Act 1991* and *Torres Strait Islander Land Act 1991*

Information

See section 3.34 *Remote area surveys*, page 58.

The Governor-in-Council, under the powers of the *Aboriginal Land Act 1991*, may issue deeds of grant over transferable land to Aboriginal people or may issue a deed of grant in trust to Aboriginal people under the *Land Act 1994.* Similar provisions apply under the *Torres Strait Islander Land Act 1991* for grants of land to Torres Strait Islanders.

Under these Acts, the Minister may direct the way in which land is described in deeds of grant or leases, as an alternative to the land being surveyed. The Minister has endorsed a policy that provides three possibilities regarding the description of land in deeds of grant or leases:

- without survey, in which case an application must be made to the Minister addressing certain matters.
- by survey; or
- by an alternate survey specification approved by the Minister, where the land is remote or survey costs are high in relation to the value of the land.

The third possibility, the alternate survey specification which the Minister approved for use under these Acts, has been made as a standard that surveyors can also use for other purposes if the specified criteria are met (See section 3.34 *Remote area surveys*). Therefore, the use of this specification is now a method of describing the land by survey, and not 'an alternative to surveying the land'. The Minister's approval would need to be sought where it is proposed that either (a) the land not be surveyed; or (b) a different approach to survey be used.

In the absence of a direction by the Minister to adopt a different approach for a particular dealing, cadastral surveys for grant or lease under the *Aboriginal Land Act 1991* and the *Torres Strait Islander Land Act 1991* and for deeds of grant in trust for Aborigines and Torres Strait Islanders under the *Land Act 1994* may be carried out either in accordance with conventional methods, or in accordance with section 3.34 *Remote area surveys*.

Standard under the SMI Act

Under the provisions of Division 2 of Part 5 of the *Aboriginal Land Act 1991* and the *Torres Strait Islander Land Act 1991*, an interest, such as a lease or an easement, may be transferred, granted or otherwise created. The requirements for survey of these interests are those applying to any other freehold parcel.

3.2 Access

Information

For the subdivision of freehold land under the provisions of the *Land Title Act 1994*, access is a matter for consideration by the planning body (e.g. local government) in its approval process. However, if public use land is to be created on the registration of the plan, access to the public use land is required to be addressed in accordance with Standard 3.2.1 *Access to public use land*.

3.2.1 Access to public use land

Standard under the Land Act

See section 3.31 *Public use land*, page 54.
See departmental policy *Creation of trust land SLM/2013/479*,
<www.resources.qld.gov.au/?a=109113:policy_registry/creation-trust-land.pdf>.

For information regarding access to public use land, see section 3.31 *Public use land*.

3.3 Accredited surveyors and endorsement of plans

Standard under the SMI Act

See departmental procedure *Submitting survey information under the Survey and Mapping Infrastructure Act 2003 SIG/2021/5860,*
<www.resources.qld.gov.au/?a=109113:policy_registry/submitting-survey-plans-under-smia.pdf>.

Prior to 3 July 2023 surveyors accredited by the department were required to endorse survey plans using a personal signature on sheet two and submit a copy of the endorsed plan to the department prior to lodgement of the plan for registration.

As a consequence of survey audit modernisation, accreditation of surveyors has now been discontinued. Endorsement at item 5 on sheet two of survey plans is allowed but is no longer a requirement. Copies of completed survey plans must still be submitted to the department to comply with section 16 of the SMI Act which requires survey plans to be submitted within 40 business days after placing a survey mark. Where survey records are to be lodged, these must accompany the submitted copy of the plan.

3.4 Accuracy

Standard under the SMI Act

3.4.1 Certificates on plans

In certificates on cadastral plans, the word 'accurate' has the commonly understood meaning—precise, exact, correct in accordance with a standard—and so has a wider meaning than that frequently used by surveyors when referring to accuracy of measurement.

Certification of the words used in Form 13, 'that the plan is accurate', implies a declaration that the plan is correct in every detail and is in accordance with the standards of accuracy specified under the *Survey and Mapping Infrastructure Act 2003* and is suitable for the intended action.

For compiled plans, the word 'accurate' also applies to the available information from which the plan is compiled, regardless of the surveyed status of that available information (section 18 of the Survey and Mapping Infrastructure Regulation 2024).

A survey plan must not include any statement which may infer that the accuracy of the survey does not comply with surveying standards (for example, a disclaimer referring to the 'fitness for purpose' of an identification survey or inferring the lack of suitability of boundary marking for particular purposes).

3.4.2 Measurement accuracy

Cadastral surveys can be conducted by measuring angles and distances, and/or by measuring positions.

The accuracy of the measurements performed by a surveyor for a cadastral survey must be capable of achieving a survey uncertainty that complies with section 8(2)(c) of the Survey and Mapping Infrastructure Regulation 2024.

Survey uncertainty means the uncertainty due to random errors in measurements in the location of any point on a survey relative to any other point on the same survey, expressed at the 95 percent confidence level.

The accuracy of a surveyor's measurements must be assessed by one or more of the following methods:

- computation of the angular and linear misclosure in a surveyed surround or severance; or
- comparison with the State control survey; or
- another method of assessment appropriate to the technology being used for the survey.

The angular misclosure in a surveyed surround or severance or the angular deviation from the adopted meridian by measuring angles and distances must not exceed the lesser of:

- 2·5 times ten seconds of arc multiplied by the square root of the number of angles; or
- 2 minutes.

The linear misclosure in a surveyed surround or severance by measuring angles and distances must not exceed either:

- 10 millimetres plus 1 part in 5000 of the total distance traversed; or
- 20 millimetres plus 1 part in 2500, if the survey is in rough or broken terrain; or
- 20 millimetres plus 1 part in 2000, if another surveyor's work is included in the surround; or
- 20 millimetres plus 1 part in 1000, if a survey effected before 1890 is included in the surround.

When measuring positions, the actual agreement between coordinates from multiple measurements of a position must not be greater than the expected agreement when calculated in accordance with section 8.4 *GNSS measurement quality for cadastral surveys*.

Irrespective of the closure or coordinate comparison result, each surveyed line (e.g. boundary lines, connections) must have a survey uncertainty of 10 millimetres + 50 ppm, or better.

3.4.3 Legal traceability

Guideline under Standard 3.4 Accuracy

See section 8.5 *GNSS measurement traceability*, page 116.
See section 24 of the *Survey and Mapping Infrastructure Regulation 2024*.
See Government's Business Queensland website *Calibration of survey equipment,*
<www.business.qld.gov.au/industries/building-property-development/surveying/calibration-equipment**>.**

Section 24 of the Survey and Mapping Infrastructure Regulation 2024 requires cadastral surveyors to ensure that the equipment they use is (a) standardised; and (b) capable of achieving the required accuracy.

All survey measurements must be traceable to the recognised national standards for length and position, as applicable.

The department offers a service to enable surveyors to validate the traceability of their electronic distance measuring equipment (EDME) to the national standards, via a series of baselines which have Regulation 13 certificates under the *National Measurement Act 1960* (Cth). The service is based on the department being appointed as a verifying authority for length under the provisions of the *National Measurement Act 1960* (Cth).

Surveyors can achieve traceability of length measurement for EDME by comparison with one of the baselines. Such comparisons should be carried out in accordance with the EDME Comparison Procedure, and include the prisms used with the EDME for distance measurement. As a general rule, benchtop tests carried out by equipment manufacturers when EDME is serviced do not provide legal traceability.

EDME comparisons should be carried out on the following occasions:

- at least annually;
- after the equipment is serviced;
- after any other event which may affect the quality of distance measurement.

For legal traceability of position measurements using GNSS, refer to chapter 8 *Surveys using Global Navigation Satellite Systems (GNSS)*.

3.5 Adjoining information

Standard under the SMI Act

See section 2.3 *Administrative boundaries – State, local government, and locality*, page 5.
See section 5.4 *Border surveys (State border of Queensland)*, page 92.
For drafting standards, see section 9.3 *Adjoining description*, page 120.

There are three interacting principles regarding the depiction of adjoining information on plans.

- First and foremost, it is a well-established principle of Queensland's cadastral system (based on legal precedent) that the extent of a parcel of land is limited by the extent of the adjoining land—there are no gaps or overlaps between titles. Consequently, it is critical that the adjoining land is correctly identified.

- Secondly, the survey plan is the only place where a parcel of land is depicted in relation to its adjoiners (there is no longer a diagram, or a written description of the metes and bounds of the land, on the title). Consequently, it is critical that the plan correctly depicts the adjoining land.
- Thirdly, the title history together with the cadastral plan record, provides a traceable history of the reconfiguration of land. Consequently, it is possible to trace with certainty the particular configuration of the adjoining land, over time.

Based on these principles, it is a requirement that all plans submitted to the department or lodged for registration have correct adjoining information for the subject land shown on face. The adjoining information must be correct at the time the plan is certified as accurate by the cadastral surveyor. This includes lots, easements that benefit the subject land, road names, watercourse names etc. that immediately adjoin the subject land, but excludes leases of land or buildings. Administrative boundaries must be shown in accordance with section 2.3 *Administrative boundaries – State, local government, and locality*. Where the State border is located in the middle or other side of an adjoining feature, such as a road or watercourse, the State border is to be shown and labelled on the survey plan as required by section 5.4 *Border surveys (State border of Queensland)*.

The implications of the above principles, which lead to the above requirement, are as follows:

- All plans must correctly depict and identify adjoining descriptions on the date the plan is certified or recertified as accurate by the cadastral surveyor. Any plan that incorrectly identifies adjoining land on that date must be corrected. Surveyors should, however, take all reasonable steps to ensure that adjoining information is correct at the time of lodgement.
- Plans must not show as adjoining information parcel descriptions which are anticipated to be, but are not yet, created. Plans should show the correct adjoining descriptions at the date the plan was certified as accurate by the cadastral surveyor.

  Where a series of plans is prepared from the one survey, instead of using a single plan with multiple sheets, each plan should be prepared as if it stands on its own (i.e. each plan should show the current adjoining descriptions, not those that will exist after other plans in the series have been registered). In addition, the plan may show the plan numbers of the adjacent plans in the series as DPs (but not the proposed lot numbers or proposed boundaries from those plans). An exception to this is when the sequence of lodgement of plans is certain (e.g. successive stages of a subdivision, in which case each plan should be prepared on the assumption that the previous plan is registered; or all plans to be lodged at once, in which case each plan should be prepared on the assumption that the other plans are registered).

  As there is no uncertainty in the titles register, if the land adjoining a lot is reconfigured after the plan was certified as accurate by the surveyor, there is no imperative to correct adjoining information prior to the plan being registered.
- Additional adjoining information such as secondary interests, identification survey plan numbers, or other parcel information may be shown, but in a fine font to avoid misidentification of adjoining descriptions.

3.6 Areas

Standard under the SMI Act

See section 3.4 *Accuracy*, page 12.
See section 9.14 *Conversions*, page 126.
See section 9.33 *Metric numeration*, page 144.

3.6.1 Calculated areas

A calculated area is required where parcels are surveyed by the survey (that is, none of the boundaries are compiled).

An identification survey that identifies an entire parcel may show an area. If shown, it is to be the calculated area. A combination of the surveyed area and deed area must not be shown. Any discrepancies between the surveyed and title areas can be addressed in the survey report.

Where a calculated area is shown on a plan, the relevant land must be fully dimensioned, and the area deduced by closure and adjustment of the misclosure by the Bowditch method and shown:

- in hectares to four significant figures where the area exceeds one hectare;
- in square metres to the nearest square metre where the area is less than one hectare;
- in square metres to the nearest 0·1 of a square metre where the area is less than one square metre and the land is of high value.

Trailing zeros to the right of the decimal point are shown in accordance with section 9.33.1 *Use of zeros*.

3.6.2 Balance areas

See section 3.6.4.2 *Dealing with other existing multiple line areas*, page 16.

A balance area is acceptable for lots that have a compiled water boundary or where the linear misclosure in the surround for any other lot does not meet the closure specifications in section 3.4.2 *Measurement accuracy*.

Where a balance area is adopted, the balance area is determined by adding or subtracting the new calculated areas of lots etc. (rounded as appropriate) from the existing net area of the parcel or parcels.

Note: There is no rounding off of this resulting area. However, the resulting area must not be shown to less than one square metre.

Balance areas must be qualified as such on the face of the plan and shown as 'Bal.'. Unsurveyed parcels with an about area cannot have a balance area.

Where adjoining new lots each have a balance area following a boundary re-alignment, the area of the severance used to calculate the balance areas is to be noted in the survey report.

3.6.3 About areas

An 'about' area is shown to **three significant figures** only regardless of whether it is calculated, compiled, or converted to metric. About areas must be qualified as such on the face of the plan and shown as 'About' or 'Abt'.

3.6.4 Multiple line areas

See section 2.9 *Reservations in title*, page 6.
See section 3.44 *Vincula*, page 71.
See section 3.45 *Part lots*, page 72.
See section 9.23 *Forest entitlement areas (FEAs)*, page 139.
See section 9.43 *Roads*, page 147.
See section 10.5 *Existing roads*, page 157.

A lot must not show multiple line area, except where a reservation in terms of section 23 or 23A of the *Land Act 1994* exists. These include reservations in:

- a 'non-fixed' position—such as a road reservation (e.g. SP132657);
- a 'fixed' position—such as a forest entitlement area.

In all other cases, the only area to be shown is the true net area of the lot, regardless of other lots, roads, watercourses, etc., and whether these are fully surrounded or not.

It should be noted that reserved roads and reserved esplanades are not a reservation in terms of section 23 of the *Land Act 1994* (see section 10.5.2 *Reserved roads and reserved esplanades*).

3.6.4.1 Dealing with multiple line areas under section 23 or 23A of the *Land Act 1994*

Where a three-line area is to be shown on a plan, the net area and the reservation in title area are to be determined in accordance with 3.6.1 *Calculated areas* or 9.14 *Conversions*. The gross area is to be the mathematical sum of the 'rounded' net area and the reservation in title area. For example:

Where an existing imperial reservation in title is to be retained:

existing road reservation (imperial)	*4.3.11*		*Rd Resn*
convert to metric	*1·9501*	*ha*	
new lot is created by survey (gross area)	*34·54*		
reservation in title to be retained	*– 1·9501*	*ha*	
by subtraction the new net deduces	*32·5899*	*ha*	
Plan presentation will be:			
gross area	***34·5401***	***ha***	
reservation in title	***1·9501***	***ha***	***Rd Resn***
net area	***32·59***	***ha***	

Note: The 'rounded' net area is adopted.

Where a new reservation in title is to be created:

new or existing lot (gross area)	*156·4*	*ha*	
new reservation in title is created by survey	*– 1234*	*m^2*	*FEA*
by subtraction the new net deduces	*156·2766*	*ha*	
Plan presentation will be:			
gross area	***156·4234***	***ha***	
reservation in title	***1234***	***m^2***	***FEA***
net area	***156·3***	***ha***	

Note: The 'rounded' net area is adopted.

3.6.4.2 Dealing with other existing multiple line areas

See section 3.6.2 *Balance areas,* page 15.

Where an existing plan shows an imperial 3 line area in acres, roods and perches (a.r.p):

gross area	*85.1.17*		
road reservation (not being retained)	*4.3.11*		*Rd Resn*
net area	*80.2.6*		
*convert existing imperial **net area** to metric*	*32·5924*	*ha*	
new lot or road is created by survey	*– 4·19*	*ha*	
by subtraction the new net deduces	*28·4024*	*ha*	
Plan presentation will be	***28·4024***	***ha***	***Bal.***

Note: The 'unrounded' net area is adopted as the existing net area is converted, not calculated.

Where an existing plan shows a metric 3 line area:

gross area	*158·534*	*ha*	
road reservation (not being retained)	*2·134*	*ha*	*Rd Resn*
net area	*156·4*	*ha*	
new lot or road is created by survey	*– 1234*	*m^2*	
by subtraction the new net deduces	*156·2766*	*ha*	
Plan presentation will be	***156·3***	***ha***	

Note: The 'rounded' net is adopted.

3.6.5 Severances and part lots

See section 3.18 *Dimensions*, page 33.
See section 3.44 *Vincula*, page 71.
See the *Registrar of Titles directions for the preparation of plans*, Direction 8.4 'Part lots'.

Where a lot is created in parts or is severed by a dividing feature (e.g. road, railway or watercourse, etc.) it may be defined either as part lots or by using vincula. It is not permissible to mix vincula and part lots for the one lot.

3.6.5.1 Dealing with part lots

Where a lot is in parts, the area of each part must be determined by the requirements of sections 3.6.1 *Calculated areas* or 3.6.2 *Balance areas*. Each part must be given an area and a total area must be shown either in the largest part or by statement on the face of the plan. The total area of the lot must be the mathematical sum of the areas of the parts with no further rounding.

3.6.5.2 Dealing with multiple areas of road

See section 9.2 *Action statements*, page 119.
See section 10.2 *Creation of road*, page 154.

Where multiple areas of new road and/or closed road are actioned on a plan, the area of each part must be determined by the requirements of sections 3.6.1 *Calculated areas*, 3.6.2 *Balance areas* or 3.6.3 *About areas*. The total area of new road and/or closed road must be the mathematical sum of the areas of the parts with no further rounding.

3.6.5.3 Dealing with lots bound by vincula

Where a lot separated by a dividing feature is bound using vincula, the area of the lot may be calculated from the sum of the areas of the individual severances, or be obtained by calculating the total area enclosed within the outer boundaries and subtracting the area of any enclosed feature. In either case, only the net area is shown and calculated to four significant figures.

Where calculating the total area enclosed within the outer boundaries and subtracting the area of any enclosed feature, and the area of the feature is calculated, the area of the lot is calculated as follows:

gross area of lot	*184·4746378*	*ha*
area of excluded feature (e.g. road)	*20·5822597*	*ha*
by subtraction the net area is	*163·8923781*	*ha*
Plan presentation will be:	***163·9***	***ha***

Note: The 'rounded' net area is adopted.

Where calculating the total area enclosed within the outer boundaries and subtracting the area of any enclosed feature, and the area of the feature exists in imperial units, the area of the lot is calculated as follows:

gross area of lot	*184·4746378*	*ha*
conversion of imperial feature (such as Road) (e.g. 50ac 3r 17p)	*20·5808*	*ha*
by subtraction the net area is	*163·8938378*	*ha*
Plan presentation will be:	***163·9***	***ha***

Note: The 'rounded' net area is adopted.

3.7 Authorisation of a surveyor to act for another surveyor

Standard under the SMI Act

Section 32 of the *Survey and Mapping Infrastructure Act 2003* provides for a person who was or is a surveyor (the authorising surveyor) to authorise another cadastral surveyor to take action in relation to requirements of the registering authority regarding the authorising surveyor's plans (for example, to attend to a requisition). If such an authorisation is given, the Act requires that a copy of the authorisation be given to the Surveyors Board of Queensland as soon as practicable.

The Act requires the registering authority to accept anything done by the authorised surveyor on behalf of the authorising surveyor, if a copy of the authorisation has been given to the registering authority.

An authorisation given under this section of the Act must meet the following requirements:

- It must be signed by both the authorising and authorised surveyor. The authorised surveyor must hold a current registration as a surveyor with a cadastral endorsement at the time of signing.
- The authorised surveyor must be properly identified, and the surveyor's contact details including business address must be provided.
- The authorisation must state either:
  - that it applies to particular plans, which must be identified; or
  - that it applies for a nominated period, the commencement and completion dates of which must be specified (it is permissible for the completion date of the period to be 'until ended by the authorising surveyor').
- Any limitations on the authorisation must be specified (e.g. plans of a particular format, plans certified after a particular date).
- A copy of the authorisation given to the registering authority must be either an original copy (i.e. with original signatures) or a copy certified by a Justice of the Peace (JP) or a Commissioner for Declarations (Cdec) that the original has been sighted and that it is a true copy of the original.

The Registrar of Titles will image any authorisation with the dealing number of the first plan lodged using the authorisation.

Direction 23.2.2 'Certification of plans by another surveyor' of the *Registrar of Titles directions for the preparation of plans* specifies the form of an amendment certificate on a plan signed by a surveyor who is authorised under section 32. If the original copy or certified copy of the authorisation has been provided to the registering authority previously in relation to another lodged plan, it is not necessary to supply another certified copy provided that a further line is added at the bottom of the amendment certificate, quoting the dealing number under which the previous plan was lodged, in the form of:

(copy of authorisation recorded with dealing ######)

In cases where a person acting under an authorisation makes amendments to an original plan that was signed by the authorising surveyor, prior to lodgement: any amendments made by the authorised surveyor must be by strikeout, accompanied by the relevant amendment certificate, as the changes are being made to a plan signed by another person; and if a copy of the authorising letter has not previously been supplied to the Registrar of Titles, it is to be supplied at the time the plan is lodged for registration.

3.8 Cancelling clause

Standard under the SMI Act

See section 3.39 *Town reserves and pasturage reserves*, page 66.
See section 3.41 *Unallocated State land (USL)*, page 70.
See section 3.42 *Undescribed balances*, page 70.
See section 9.18 *Descriptions in title block*, page 136.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.9 'Plan description and cancelling clause'.

It is imperative that the 'cancelling clause' be correctly completed in the title block of the plan. The cancelling clause is an essential part of maintaining the history of the cadastre through the parent–child relationship between the lots. This relationship is recorded in the CISP database and forms the cornerstone of the CISP historical searching facility. Each plan must contain all lots, with their plan description, that are being cancelled by the plan.

The Registrar's directions state that common property in a cancelling clause must be described as '*Common Property of <scheme name> Community Titles Scheme <cms/cts number>*'. 'Community Titles Scheme' may be abbreviated to CTS. See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 11.3, 'Description of common property'. As this method of showing common property does not give the requisite linkages for CISP, the lot-on-plan descriptions of common property must be noted in brackets at the bottom of the title block (i.e. CP on BUP123, CP on SP1234). As the CP-on-plan description is only incidental to and not part of the cancelling clause noted in the preceding paragraph, it should be shown in a smaller font and must not be shown immediately after the description.

Unallocated State Land (USL) parcels have a valid lot-on-plan description, which is available from SmartMap. Where a USL parcel is cancelled, it is treated as any other lot-on-plan description in the cancelling clause. Where an undescribed area of USL is being cancelled, such as an area of road, watercourse or ocean, the cancelling clause must state that the part of USL being cancelled is part of the named watercourse or water body, or closed road, as the case may be. Where only the undescribed area of USL is being cancelled (i.e. there is no other described lot being also cancelled), the lot-on-plan descriptions of adjoining lot/s must be noted in brackets at the bottom of the title block. This enables the plan to be linked to adjoining plans for search purposes. See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.10, 'Cancelling clause containing reference to unallocated State land'.

Information

The Registrar's directions state that for plans of freehold and non-freehold tenures, the plan must cancel the whole of a lot on a plan from which the current tenure is issued. Undescribed balances of described parcels are not allowed without approval of the Registrar of Titles. See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.17, 'Undescribed balances'.

3.9 Certification by surveyor

Standard under the SMI Act

See section 3.11 *Compiled plans and boundaries*, page 24.
See section 3.21.3 *Amendments to identification surveys*, page 41.
See section 9.24 *Ink*, page 139.
See section 9.37 *Original dimensions*, page 145.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.11 'Surveyors certificate'.

Forms 12, 13 and 18 are issued under the *Survey and Mapping Infrastructure Act 2003*. (Note that for the sake of consistency with forms under the previous Act, the form numbers have not changed.)

All cadastral survey plans are required to show a certificate in accordance with Form 13 or Form 18. Where a plan contains a mixture of survey information and information compiled from other sources (see 3.11 *Compiled plans and boundaries*), a Form 13 certificate is used to meet the requirements of sections 21 and 22 of the Survey and Mapping Infrastructure Regulation 2024. Form 13 has relevance to the survey information. However, in keeping with sections 17 and 18 of the Survey and Mapping Infrastructure Regulation 2024, a statement indicating the origin of compiled information must be shown on the face of the plan.

The surveyor's name must be shown in full. The surveyor must be a cadastral surveyor at the time of survey and signing of the plan.

The manner of execution of a plan by a corporation is determined by its constitution, which will specify whether or not the common seal is to be affixed. Whenever a corporation signs a plan, the individual who undertook the survey must be identified on the certificate, along with their registration status.

The date of signature must not precede the survey completion date. The survey completion date must not be before the last day of field work. The plan should be signed and dated prior to lodgement for approval with the planning body (e.g. local government).

Surveyor's certificates must be signed by a personal signature as defined under section 1.3 *Definitions and conventions*. For information about certificates of amendment or amendments to surveyor's certificates, refer to the *Registrar of Titles Directions for the Preparation of Plans*, Direction 23.1, 'Amendments to plans - General'.

For information about certificates of amendment or amendments to surveyor's certificates on identification surveys, refer to standard 3.21.3 *Amendments to identification surveys*.

3.9.1 Certificates

Information

See Appendix E *Certificates*, page 186.

The certificates for cadastral plans are forms approved by the chief executive under section 135 of the *Survey and Mapping Infrastructure Act 2003*. They are published on the government's Business Queensland website. Examples are provided in Appendix E to assist with the completion of the relevant forms.

3.10 Changing deeds of grant, reserves, leases and trust land

Information

See section *9.2 Action statements*, page 119.

Changes to deeds of grant, reserves, leases and trust land are effected using the following provisions of the *Land Act 1994*:

- section 31A and 34D for reserves
- section 165B and 166 for conversion of term leases or perpetual leases
- section 358 for deeds of grant, including deeds of grant in trust
- section 360(1)(e) for freeholding leases
- section 360A(2)(d) for term leases, and perpetual leases.

There may be instances where the above actions can be combined on the one plan.

3.10.1 Changing deeds of grant under section 358 of the *Land Act 1994*

Information

Section 358(1) of the *Land Act 1994* allows a registered owner to surrender the current title if the description of the land is no longer correct because of an exchange, addition of land or closing of a road.

Section 358(3) states that 'on surrender of the land' the current title is cancelled and 'a new deed must be issued containing the land to which the registered owner or trustee is entitled'. Freehold land surrendered to the State under section 358 is surrendered by registration of a transfer in the freehold land register. On registration of the new deed, the land 'to which the registered owner' is **not** entitled becomes unallocated (and unencumbered) State land.

Section 182 of the *Land Title Act 1994* states:

> *'On registration of an instrument that is expressed to transfer or create an interest in the lot, the*

interest:

(a) is transferred or created in accordance with the instrument; and

(b) is registered; and

(c) vests in the person identified in the instrument as the person entitled to the interest.'

Consequently, freehold land is surrendered to the State (for further dealing under section 358 of the *Land Act 1994*) from the moment the transfer (surrender) is registered in the freehold land register.

3.10.2 Changing leasehold land

Information

Land is added to or excised from leases by amending the description under sections 360 and 360A of the *Land Act 1994*.

3.10.3 Exchange of land

Standard under the SMI Act

See section *9.2 Action statements*, page 119.
See section 18(1) and section 358(1)(a) of the *Land Act 1994*.

3.10.3.1 Exchange deed of grant with a lease, reserve or trust land

Section 18(1) of the *Land Act 1994* allows the Governor-in-Council to grant unallocated State land in exchange for freehold land and, as advised in the note to section 18(1), 'a deed of grant issued because of an exchange of land is issued under section 358'.

Where parts of the lots are exchanged, if the land to be added to the deed of grant is currently part of a *Land Act 1994* lease, reserve or trust land, the land to be added to the freehold has to be excised from that lease, reserve or trust land. The new freehold lot and balance area of the lease, reserve or trust land must be prepared on one survey plan. The freehold lot must be in a fully surveyed state. The survey status of the balance lot must not be any lesser than the status of the lease, reserve or trust land that is being dealt with.

The freehold land must adjoin the lease, reserve or trust land. Land separated by a dividing feature (e.g. road, railway, or watercourse) is acceptable (refer to sections 3.44 *Vincula* and 3.45 *Part lots*). The documentation lodged with the plan will set out the steps required to change both the deed of grant, and the lease, reserve or trust land. No action statement is required.

3.10.3.2 Exchange between leases, reserves, trust land or USL

Section 18(2) of the *Land Act 1994* allows the Governor-in-Council to grant unallocated State land in exchange for land subject to a freeholding lease and, as advised in the note to section 18(2), 'a freeholding lease amended because of an exchange of land is issued under section 360(1)(f)'.

Section 18(3) allows the Minister to lease unallocated State land in exchange for land subject to a term lease (other than a term lease over a reserve) or perpetual lease and, as advised in the note to section 18(3), 'a term or perpetual lease amended because of an exchange of land is issued under section 360A(3)(c)'. Section 327A allows a lessee to surrender all or part of a lease on terms agreed between the lessee and the Minister.

The description of a term lease over a reserve (a State lease) is amended under section 360B but the land included or excised from a State lease is trust land.

Where parts of a lease, reserve, trust land or USL are exchanged, the lease, reserve, trust land or USL must be adjoining, and one plan must be used. In effect, this is prepared as a plan of subdivision. Land separated by a dividing feature (e.g. road, railway, or watercourse) is acceptable. (Refer to sections 3.44 *Vincula and* 3.45 *Part lots*). No action statement is required unless 'undescribed' USL, such as road or creek, is added. (Refer to sections 3.10.4 *Permanently closing road*, 3.10.5 *Simultaneous opening and closure of road*, and 3.10.6 *Adding USL or part of a reserve or deed of grant in trust to a deed of grant by sale without competition*). The documentation lodged with the plan will set out the steps required to amend the lots.

3.10.4 Permanently closing road

Standard under the SMI Act

See section *9.2 Action statements*, page 119.

Permanent closure of road is effected by registration of a plan of subdivision (section 108 of the *Land Act 1994*). The plan either creates a lot for the permanently closed road or adds the land to an adjoining lot (section 109 of the *Land Act 1994*). An action statement describing the closed road is required.

3.10.5 Simultaneous opening and closure of road

Standard under the SMI Act

See section 9.2.3 *Simultaneous road opening and closure*, page 120.

A simultaneous road opening and road closure action can be processed in two ways. The options are to:

- close the entire length of the existing road, and open the entire length of the new road, as two discrete parcels; or
- deal with each of the individual segments of the new road and road to be closed.

It is not essential that the intersection of new road and the road to be closed be surveyed, provided that the surveyed status of the amended road system and any affected land is maintained. If the whole of the length of the road is not addressed, intersections of the road opening and road closure may need to be determined.

The survey plan must show the areas of each segment to be opened and closed defined by station numbers, with relevant action statements.

3.10.5.1 Freehold land (excluding deeds of grant in trust)

See section *9.2 Action statements*, page 119.
See sections 109A and 358(1)(e) of the *Land Act 1994*.

Information

Section 109A of the *Land Act 1994* allows the simultaneous opening and closure of road within or adjoining a deed or deeds of grant under the same ownership. The simultaneous road action is completed using a section 358 surrender and issuing of a new deed of grant.

Under section 109A, multiple deeds cannot be amalgamated or subdivided. However, a severance caused by the opening of the new road may be included in the other deed under section 109A(2)(a), with the approval of the Minister.

3.10.5.2 Leases, reserves and deeds of grant in trust

See section *9.2 Action statements*, page 119.
See sections 109B and 358(1)(e) of the *Land Act 1994*.

Standard under the SMI Act

Section 109B of the *Land Act 1994* allows the simultaneous opening and closure of a road within or adjoining leases, reserves and deeds of grant in trust. The simultaneous road action is completed using section 358 for deeds of grant in trust, section 31A for reserves, section 360(1)(e) for freeholding leases, and section 360A(2)(d) for term leases and perpetual leases.

When there are two separate lots that are affected on either side of the road, section 109B can be used only if the lots have the same tenure type and the same registered owner. In such a case, one plan may be used. Severances can be transferred on the same plan.

Land cannot be included in a deed of grant in trust for Aboriginal and Torres Strait Islanders unless the land is transferable land under the *Aboriginal Land Act 1991* (section 42A).

3.10.6 Adding USL or part of a reserve or deed of grant in trust to a deed of grant by sale without competition

Standard under the SMI Act

See section 3.41 *Unallocated State land (USL)*, page 70.
See section *9.2 Action statements*, page 119.
See sections 122(1) and 358(1)(f) of the *Land Act 1994*.

Section 122(1) of the *Land Act 1994* allows for the sale without competition of USL. If the sale is conditional on adding the USL to an existing deed, section 358(1)(f) is used to issue the new deed of grant amalgamating the USL with the existing grant. A plan of subdivision is required, showing the land that is the subject of the new deed of grant.

If the part to be added is currently part of a reserve or a deed of grant in trust or a USL lot described on a survey plan, the plan must also show the balance lot of the reserve, deed of grant in trust or USL lot. The surveyed status of affected lots must be maintained. No action statement is required.

If the part to be added is currently part of a lot not described on a survey plan, the balance of the lot must be shown on an Administrative plan as a minimum. If the balance is to be described on an AP, the AP will show separate lots for the part to be added and the balance, with the plan of subdivision then cancelling the AP lot being the part to be added. However, if the part to be added is currently part of a town reserve or development lease where the reserve or lease is currently described by exclusions from an undescribed balance, the Registrar of Titles may approve that a plan of the balance of the lot is not required.

3.10.7 Adding part of a deed of grant in trust to a lease, reserve or trust land

Information

To add part of a deed of grant in trust to a lease, reserve or trust land, a plan is prepared under the *Land Title Act 1994* to subdivide the deed of grant in trust. There is a following action to surrender the required lot and add it to the lease, reserve or trust land.

3.10.8 Conversion of term leases or perpetual leases under the *Land Act 1994*

Information

See section 3.10.5 *Simultaneous opening and closure of road*, page 22.
See section 9.2.3 *Simultaneous road opening and closure*, page 120.
See departmental procedure *Renewal or conversion of a term lease SIG/2017/3553,*
<www.resources.qld.gov.au/?a=109113:policy_registry/renewal-or-conversion-of-a-term-lease.pdf>.
See departmental procedure *Conversion of perpetual leases to freehold SIG/2017/3555,*
<www.resources.qld.gov.au/?a=109113:policy_registry/conversion-of-perpetual-leases-to-freehold.pdf>.
See departmental procedure *Conversion of leasehold tenure SLM/2013/397,*
<www.resources.qld.gov.au/?a=109113:policy_registry/conversion-leasehold-tenure.pdf>.

Section 166 of the *Land Act 1994* allows a lessee to apply to convert a perpetual lease or a term lease to freehold land, and a term lease to a perpetual lease (but only if the term lease is a lease for pastoral purposes or for tourism purposes for land on a regulated island). Section 165B allows the chief executive to make an offer to convert a perpetual lease or a term lease to freehold land, and a term lease to perpetual lease, prior to receiving an offer from a lessee.

A variety of types of plans have been used to identify land for the purposes of issuing term leases under the *Land Act 1994*. To improve the certainty of the metes and bounds of term leases and perpetual leases, all plans being used for conversion (and renewal) must be investigated to ensure there is a suitable description of the parcel. Conversion to a freeholding tenure requires a fully surveyed parcel.

When leases are to be converted, the plan is investigated by departmental surveyors to ensure there is a suitable description of the parcel, in accordance with a departmental Standard Operating Procedure. That procedure will result in one of the following:

- the plan is acceptable
- the plan is acceptable with minor amendments (e.g. lot number, area)

- there are survey plans behind the current plan which would make a more suitable description of the holding – convert the holding description to that Lot on Plan
- the plan is not acceptable and a new survey plan is required.

Where a new survey plan is required, a letter of offer to the applicant will state the plan requirements. It is recommended that survey advice is sought from the local departmental surveyors to confirm the specific survey requirements.

Should it be determined that, at some time, a non-tidal watercourse formed a boundary within the leased land and tenure issued to that watercourse boundary, the bed and banks of that watercourse became and remain the property of the State. Therefore, the watercourse will be required to be excised from the lot for conversion to freehold.

Similarly, should it be determined there is a tidal watercourse within the leased land, the watercourse will be required to be excised from the deed of grant. There are no provisions under the *Land Act 1994* to issue freehold tenure over tidal waters.

3.11 Compiled plans and boundaries

Standard under the SMI Act

See section 3.4 *Accuracy*, page 12.
See section 3.6.2 *Balance areas*, page 15.
See section 3.9 *Certification by surveyor*, page 19.
See section 3.18 *Dimensions*, page 33.
See section 3.20 *Encroachments and improvements on or near a boundary*, page 35.
See section 3.37 *Survey reports*, page 64.
See section 4.3 *Compiling tidal and non-tidal water boundaries*, page 77.
See section 9.7 *Buildings and other improvements on or near a boundary*, page 123.
See section 9.37 *Original dimensions*, page 145.
See section 11.11 *Paper subdivisions*, page 164.
See sections 17 and 18 of the *Survey and Mapping Infrastructure Regulation 2024.*
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.16 'Plans may be compiled'.

All source information (boundary dimensions or areas) used to compile any boundary or area must be publicly searchable through the department. Any information that is not publicly searchable must be included in survey records and lodged with the plan. 'Publicly searchable' means that the information is part of the records made available to the public from the department and the land registry.

The origin of all source information used to compile any boundary on a survey plan must be included in the Form 18 certificate or original information statement, as appropriate.

Standard 4.3 *Compiling tidal and non-tidal water boundaries* directs when compilation of a water boundary may occur for a first or subsequent new plan of survey. Where standard 4.3 requires a new plan to survey a water boundary (as it is unable to be compiled, or is not a reserved plan of survey or survey of exempt land) and the current location of a water feature boundary is determined from a source such as imagery or a digital model (subject to 4.2 *Surveying tidal and non-tidal water boundaries*), the boundary is surveyed in accordance with the requirements of standard 3.38 *Surveys using remotely sensed data*. In this case it is not a fully compiled plan, and a Form 13 is used even where other boundaries of the subject land may be able to be compiled.

In this case, Form 13 has relevance to the surveyed information for the water boundary. In keeping with sections 17 and 18 of the Survey and Mapping Infrastructure Regulation 2024, a statement indicating the origin of compiled information must be shown on the face of the plan. The survey report must clearly identify that only the water boundary has been surveyed (using remotely sensed information) and other boundary dimensions shown have been compiled from the relevant sources.

3.11.1 Compiled plans

Standard under the SMI Act

Where all boundaries on a survey plan have been compiled, the compilation certificate (Form 18) is used to meet the requirements of section 18 of the Survey and Mapping Infrastructure Regulation 2024.

Compiled plans are subject to the following:

- Where the land is in a fully surveyed state, all corners must have been previously marked.
- Dimensions of the boundaries may be compiled from any source that is part of a public record in accordance with sections 17 and 18 of the Survey and Mapping Infrastructure Regulation 2024. It should be noted that the Digital Cadastral Database (DCDB) is **not** a source from which dimensions can be compiled.
- Dimensions may be compiled directly from source information or may be deduced by addition or subtraction from source dimensions.
- Where the lot meets the closure specifications in section 3.4.2 *Measurement accuracy*, a calculated area is required.
- Where the lot does not meet the closure specifications in section 3.4.2 *Measurement accuracy*, the original areas must be added or subtracted (the result is not rounded off). If the original areas are imperial, the areas must be added or subtracted together first and then converted to the nearest square metre.
- It is recommended that compiled plans include a survey report. Plans containing compiled water boundary information must include a survey report, see section 4.5 *Reporting requirements for surveys.*

3.11.2 Subdivision by compiled plan

Standard under the SMI Act

Where parcels have previously been amalgamated, they may be subdivided by a compiled plan provided that the monuments indicating the separate lots have not been removed (section 18 of the Survey and Mapping Infrastructure Regulation 2024).

Generally, new lot boundaries should not be compiled from previous traverse lines. There will be some situations in which this practice may be acceptable, and advice should be sought from the department to ascertain as to whether or not the specific situation would be acceptable or not.

An example of this practice possibly being acceptable could be where the parcel being created is a secondary interest parcel, or where the land is isolated, and the lots are anticipated to sell over a number of years. The lot or parcel corners must have previously been marked in these situations.

3.11.3 Consolidated titles

Information

A consolidated title is one in which two (2) or more lots are shown on the one indefeasible title. A single title for two or more lots that have the same registered owner may be created, pursuant to a set of specific circumstances, under section 39 of the *Land Title Act 1994*. Separate indefeasible titles may be created, from a consolidated title, pursuant to a set of specific circumstances, under section 40 of the *Land Title Act 1994*.

Separate indefeasible titles may be issued for each of the lots in an existing single title if:

- the description in the existing single title indicates that there is more than one lot; and
- each of the lots is described on a plan held in the land registry (freehold or State land action plan) and each lot is fully dimensioned and has an area; and
- if there is no conditional consent, requiring the land to be held in the one ownership, noted on the plan or plans of the lots.

3.11.3.1 General

Information

Where a lot that is contained within a consolidated title is adjusted using section 358 of the *Land Act 1994*, it is necessary to identify and dimension only the affected lot on the face of the plan. The new deed will issue on the existing descriptions of the unaffected lot(s) and the new plan.

Separate titles may be issued, if requested, subsequent to that issue of the new deed for each of the lots in the new deed if:

- the description in the existing single deed indicates that there is more than one lot; and
- each of the lots is described on either a plan held in the land registry (freehold or State land action plan) and each lot is fully dimensioned and has an area; and
- if there is no conditional consent, requiring the land to be held in the one ownership, noted on the plan or plans of the lots.

Where a lot that is contained within a consolidated title is affected by the registering of a dealing (e.g. a plan of survey) in the land registry pursuant to the *Land Title Act 1994*, separate titles will be issued for each of the lots in an existing consolidated single title if:

- the description in the existing single title indicates that there is more than one lot; and
- each of the lots is described on either a plan held in the land registry (freehold or State land action plan) and each lot is fully dimensioned and has an area; and
- if there is no conditional consent, requiring the land to be held in the one ownership, noted on the plan or plans of the lots.

The issue of the new titles for the lots will happen as an internal process and precede the registration of the dealing.

3.11.3.2 Compiled plans for resumptions affecting consolidated titles

Information

In situations when all of the following apply:

- an existing consolidated title was affected by a resumption action,
- the resultant State land action plan did not contain complete dimensions and areas for the affected parcels,
- the owner is unable to obtain a certificate of title for the individual lots,

a request for the correction of the resumption plan can be lodged with the local departmental principal surveyor. The local departmental principal surveyor will arrange for the appropriate action at no cost to the applicant.

3.11.4 Compilation of an unsurveyed (About) parcel

Standard under the SMI Act

See section 3.6.3 *About areas*, page 15.
See section 3.11.5 *Compiled plan of large unsurveyed parcel*, page 27.
See section 9.28 *Linework*, page 141.

When a lot is surveyed off an unsurveyed lot, the balance lot may be shown on the same plan as the plan of survey. In these cases, the provisions of sections 17 and 18 of the Survey and Mapping Infrastructure Regulation 2024 apply.

For both compiled plans of an unsurveyed lot and survey plans containing an unsurveyed lot or unsurveyed balance lot, the following table (Table 3-1) may be used as a guideline for about dimensions:

Table 3-1 Rounding dimensions for unsurveyed boundaries

Bearings	Nearest 0° 15′
Distances	(According to scale of plans)
Up to 1:1250	Nearest 0·5 metre
1:1500 to 1:2500	Nearest 1 metre
1:3000 to 1:8000	Nearest 2 metres
1:10000 to 1:25 000	Nearest 10 metres
1:30 000 to 1:80 000	Nearest 20 metres
1:100 000 and above	Nearest 50 metres

Note: Any dimension may be shown to a better accuracy if the base data supports it.

Where a bearing and/or distance has not been previously surveyed, each must always be qualified by the addition of 'Abt'. Where an about dimension is compiled from a previous plan, the further qualification 'Abt ….. Orig' and 'Abt ….. Bal' as the case may be, may be used.

The dimensions of the parcel should reflect the accuracy of the base information from which the dimensions were determined. The linear misclose must be at least 1:1000.

3.11.5 Compiled plan of large unsurveyed parcel

Standard under the SMI Act

See section 5.13 *Local government boundary*, page 95.
See section 9.43 *Roads*, page 147.
For accuracies of metes and bounds and areas, see section 3.11.4 *Compilation of an unsurveyed (About) parcel*, page 26.

This section can be applied to any large non-freehold parcel, but generally applies to pastoral holding/grazing farms.

The name of the station/holding may be shown under the subject lot number on the face of the plan.

Allocation and plotting of local governments is required.

Roads, surveyed or unsurveyed, are to be shown in accordance with section 3.18 *Dimensions* and section 9.43 *Roads*.

Statement concerning '*Fences to be adopted as boundaries*' etc. is to be shown if applicable.

The plan is compiled by collating the latest available data surrounding the lot. This may vary from surveyed information to 'scaling' information from published maps, sketches on lands files, etc. The plan is **not** drafted purely by tracing or digitising from a published map.

3.12 Confused boundaries

Information

Where a surveyor identifies a survey problem that is of such a nature that it affects a local community and a single client could not reasonably be expected to pay for the rectification of the problem, a confused boundary area may exist. This does not apply to areas where the reinstatement of boundaries is merely difficult or complex.

If the surveyor believes that a confused boundary area exists, it should be referred to the department for an assessment as to whether the department will undertake an investigation. Although there is no mechanism available at present to rectify all of the boundaries in a confused boundary area, it may be possible to reach agreement amongst the landholders to a plan of resurvey of all of the affected parcels.

3.13 Connection of surveys and detached lots

Standard under the SMI Act

See section 3.44 *Vincula*, page 71.
See section 3.45 *Part lots*, page 72.

A surveyor must adequately connect a survey to existing surveys. If there are no existing surveys (e.g. the first survey on an island) the position of the survey can be determined by another method that enables the survey to be accurately shown in relation to a natural feature or occupation.

Where a parcel is wholly contained within another parcel (e.g. island lots or secondary interests) or where a parcel contains any surveyed internal exclusion (doughnut parcel), its relationship to the boundaries of the outer lot must be shown by at least two separate connections between the inner parcel/s and outer boundaries of the base parcel.

3.14 Coordinates

3.14.1 Coordinates—General

Standard under the SMI Act

See section 3.28 *Permanent survey marks and connection to datum*, page 50.
See chapter 8 *Surveys using Global Navigation Satellite Systems (GNSS)*, page 110.

A coordinates table must be shown on the face of a survey plan when the survey is connected to the State control survey. All coordinates in the table must relate to the geodetic reference framework[2], which is realised by the State control survey. Plans are not to show a mixture of coordinates in different geodetic reference frames.

Only Map Grid of Australia (MGA[3]) coordinates are to be shown on a survey plan, except where local coordinates are used to define a volumetric lot. MGA[3] coordinates are to be computed in accordance with the *GDA technical manual*, <www.icsm.gov.au/gda2020-and-gda94-technical-manuals>.

Standards of accuracy (uncertainty) and recommended practices for surveys, reductions and marking are set out in *ICSM Standard for the Australian Survey Control Network (SP1 v2.2)*, <www.icsm.gov.au/publications/standard-australian-survey-control-network-special-publication-1-sp1>. Further guidance is contained in chapter 8 *Surveys using Global Navigation Satellite Systems (GNSS)*.

Information

On 1 July 2020, the Geodetic Datum of Australia 2020 (GDA2020) was officially adopted as the datum for Queensland (see section 14 of the Survey and Mapping Infrastructure Regulation 2024). Consequently, new surveys commenced after 1 July 2020 that connect to datum are required to use GDA2020. Subsequent stages of developments that were commenced on GDA94 prior to 1 July 2020 can continue to use GDA94 for consistency.

3.14.2 Hierarchy of coordinate types

Standard under the SMI Act

Coordinates with a GDA lineage of 'Datum' are those coordinates on survey marks in the Survey Control Register that result from an adjustment of the observations as part of the State control survey.

Coordinates with a GDA lineage of 'Derived' are those coordinates on all other survey marks in the Survey Control Register.

[2] From 1 July 2020, the geodetic reference framework is GDA2020 under section 14 of the Survey and Mapping Infrastructure Regulation 2024.

[3] MGA94 or MGA2020, depending on the particular GDA/MGA being used for the survey.

3.14.3 Coordinates of cadastral corners and new marks

Standard under the SMI Act

See section 3.23 *Marking*, page 42.
See section 3.24 *Meridian*, page 48.
See section 3.28 *Permanent survey marks and connection to datum*, page 50.
See chapter 8 *Surveys using Global Navigation Satellite Systems (GNSS)*, page 110.

Coordinates may be established on marks for a survey conducted in accordance with sections 3.19 *Easements—surveys of long line easements*, 3.22 *Large scale land development surveys*, 3.28 *Permanent survey marks and connection to datum or* 3.30 *Profit a prendre*.

If necessary, coordinates for corners of the subject lot may be shown on a plan, only where that information is an integral part of the definition of the lot's boundaries. Plans showing coordinates for lot corners may need to provide a statement of terrain heights used to determine the distances shown on the plan (see chapter 8 *Surveys using Global Navigation Satellite Systems (GNSS)*).

All coordinates on a plan must be tabulated.

- Each coordinate must state its accuracy (positional uncertainty), lineage and method used to determine the coordinate values.
- Where existing permanent survey marks with **datum** lineage coordinates are used to determine coordinates on cadastral corners and/or new marks, those existing PSMs and their coordinate values as shown in the Survey Control Register must be shown in the coordinates table (e.g. PM43067, PM43606 and stations 1 and 2 in the example below).
- Where CORS (Network RTK or AUSPOS) are used to determine coordinates on cadastral corners and/or new marks, only those cadastral corners and/or new marks will be shown in the coordinates table (e.g. station 4 and PM###2 in the example below).
- Positional uncertainty (P.U. in the example table below) is to be determined in accordance with the *ICSM Standard for the Australian Survey Control Network (SP1 v2.2)* <www.icsm.gov.au/publications/standard-australian-survey-control-network-special-publication-1-sp1>.
- The method of determining the coordinate values to be shown in the table are those methods covered by *ICSM Standard for the Australian Survey Control Network (SP1 v2.2)* <www.icsm.gov.au/publications/standard-australian-survey-control-network-special-publication-1-sp1>.

Depending on the method of the survey, it may be necessary to also show the meridian table as shown in section 9.32.2 *Meridian by observation*, and/or the connections to permanent survey marks as presented in Figure 9-6 and Figure 9-7 at the end of section 9.15 *Corner information*.

Plan presentation of coordinates on any plan should conform to the following (Figure 3-1):

MGA COORDINATES GDA2020[2,4]

Station	*East*	*North*	*Zone*	*P.U.*	*Lineage*	*Method*	*Remarks*
PM43067	*436 572·111*	*7 256 243·605*	*56*	*0.025*	*Datum*		
PM43606	*436 672·218*	*7 256 000·662*	*56*	*0.022*	*Datum*		
1	*436 600·15*	*7 256 111·52*	*56*	*0.066*	*Derived*	*Traverse*	*Peg*
2	*436 673·53*	*7 256 124·69*	*56*	*0.068*	*Derived*	*Traverse*	*Peg*
3	*436 607·34*	*7 256 187·55*	*56*	*0.056*	*Derived*	*Single Stn RTK*	*Peg*
4	*436 651·32*	*7 256 200·11*	*56*	*0.035*	*Derived*	*Network RTK*	*Peg*
5	*436 633·92*	*7 256 777·33*	*56*	*0.034*	*Derived*	*Static*	*Pin*
6	*436 619·62*	*7 256 156·21*	*56*	*0.04*	*Derived*	*Quick Static*	*Screw*
PM###1	*436 599·445*	*7 256 274·091*	*56*	*0.034*	*Derived*	*Static*	*New PM*
PM###2	*436 621·788*	*7 256 188·007*	*56*	*0.032*	*Derived*	*AUSPOS*	*New PM*
PM12345	*436 555·8*	*7 256 222·6*	*56*	*0.9*	*Derived*	*DGNSS*	
PM23456	*436 595*	*7 255 980*	*56*	*7.5*	*Derived*	*Single Point Positioning*	

Figure 3-1 Example of coordinates

Note: The two existing PSMs in this example (PM43067 and PM43606) are the datum used to derive the coordinates of the new corners 1, 2, 5 and PM###1, and the source of the coordinates for those existing PSMs is the Survey Control Register.

Datum lineage coordinates on an existing PSM must never be replaced by **derived** coordinates. The practice of showing **new** derived coordinates for existing PSMs with derived coordinates on the face of survey plans is discouraged, unless the new coordinates have an improved positional uncertainty compared to that recorded in the Survey Control Register (i.e. PM12345 and PM23546 in the table above). The Survey Control Register is the primary database for coordinate information on any datum marks. As more accurate information or network adjustments are made, the coordinates and/or positional uncertainty of any PSM may change.

Scaled coordinates are **never** to be shown on the face of any survey plan.

3.15 Covenants

Information

See sections 373A to 373D of the *Land Act 1994*.
See sections 97A to 97DA of the *Land Title Act 1994*.
See the *Land Title Practice Manual (Queensland)*, Part 31.
See the *Registrar of Titles directions for the preparations of plans*, Part 21 'Covenants'.

Section 174 of the *Land Act 1994* was repealed in 2014. Therefore, a survey plan is not required to allocate any Section 174 covenant notations on title. A note that the covenant is to be removed on registration of the plan can be added to the plan.

3.16 Curved boundaries

Standard under the SMI Act

Curved boundaries may be accepted by the department for new lot boundaries where the boundary is readily and unambiguously discernible on the ground at the completion of the survey as is required by

[4] GDA94 or GDA2020, depending on the particular GDA/MGA being used for the survey.

section 12 of the Survey and Mapping Infrastructure Regulation 2024.

By way of example a curved boundary may be used where it coincides with a curved feature such as a canal wall.

Where a curved boundary is permitted, the boundary must be defined. For example, a circular boundary must be defined by:

- tangent points of the curve; and
- bearing and distance of the chord between the tangent points; and
- radius; and
- arc length.

3.17 Description of parcels

Standard under the SMI Act

See section 9.18 *Descriptions in title block*, page 136.
See also departmental policies under the *Land Act 1994*, <www.nrmmrrd.qld.gov.au/about-us/policies>.
See the *Queensland Parcel Identification Standard*,
<www.resources.qld.gov.au/?a=109113:policy_registry/parcel-identification_standard.pdf >**.**
See the *Registrar of Titles directions for the preparation of plans*, Direction 4.4 'Plan with only one sheet'.
See the *Registrar of Titles directions for the preparation of plans*, Direction 4.5 'Plan with additional sheets'.

Section 50 (1)(c) of the *Land Title Act 1994* requires all lots to be identified with separate and distinct numbers. All parcel descriptions must conform with the Queensland Parcel Identification Standard. The Standard allows for lot numbers to be up to 5 digits in length.

Also, please note that Lot 9999 is used as a lot identifier for Common Property, both in internal systems and for a multitude of organisations that consume our spatial data. Therefore specifically, Lot 9999 must not be used as a lot number on a survey plan.

The legislative head of power determines whether a parcel requires an alpha or numeric lot description, and whether the parcel type is described as lot or as a specific tenure identifier. Refer to the tables (Table 3-2, Table 3-3, and Table 3-4) below.

Table 3-2 Actions under the *Land Act 1994*

Section of *Land Act 1994*		Primary, secondary interest	Lot numeric	Lot alpha	Sample	Survey Plan	AP
13AA	Lease or Reserve in non-tidal watercourse	P	Yes		Lot 1	Yes	
14(1)	Deed of Grant (D/G)	P	Yes		Lot 1	Yes	
14(2)	D/G in trust	P	Yes		Lot 1	Yes	
14(2)	D/G in trust—ATSI	P	Yes		Lot 1	Yes	
15(2)(a)	Lease of USL	P	Yes		Lot 1	Yes	
15(2)(b)	Lease in a reserve	S		Yes	Lot A	Yes	
23	Future Conservation Area (FCA)	S		Yes	FCA 1	See *5.11*	
31	Reserve	P	Yes		Lot 1	Yes	
57	Trustee lease (reserve)	S		Yes	Lease A[1]	Yes	
57	Trustee lease (DOGIT)	S			Lease A	Yes	
60	Trustee permit	S		Yes	Lot A		Yes

Section of *Land Act 1994*		Primary, secondary interest	Lot numeric	Lot alpha	Sample	Survey Plan	AP
89	Survey of trust land	P	Yes		Lot 1	Yes	
103	Road licence	S		Yes	Lot A		Yes
124	Lease of SF or NP	S		Yes	Lot A	Yes	
126(1)	Strategic port land above tidal boundary—D/G or lease	P	Yes		Lot 1	Yes	
126(2)	Strategic port land below tidal boundary—lease only	P	Yes		Lot 1	Yes	
127	Reclaimed land—D/G or lease	P	Yes		Lot 1	Yes	
177	Permit over USL	S		Yes	Lot A		Yes
177	Permit over reserve	S		Yes	Lot A		Yes
177	Permit over road	S		Yes	Lot A		Yes
178	Permit over land in area of tidal influence	S		Yes	Lot A		Yes
335(2)(a)	Sublease of a lease	S			Lease A		
335(2)(b)	Sublease of a lease	S			Lease A	Yes	
363 & 364	Easements	S			Emt A	Yes	
373A	Covenant	S			Cov A	Yes	
373G	Profit a prendre	S			Profit A	Yes	
multiple	USL	P	Yes		Lot 1	Yes	Yes

Note: 1. Leases over State forest/timber reserves under the *Forestry Act 1959* or over protected areas under the *Nature Conservation Act 1992* are statutory leases and are described as Lot <alpha>. Common areas in road and rail corridors declared under the *Transport Infrastructure Act 1994* are described as Lot <alpha>.

Table 3-3 Actions under the *Land Title Act 1994*

See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.8.1 'Description of Parcels'

Interest	Primary, secondary interest	Lot numeric	Lot alpha	Sample	Survey Plan
Lot	P	Yes		Lot 1	Yes
Lease	S		Yes	Lease A	Yes
Easement	S		Yes	Easement A	Yes
Covenant	S		Yes	Covenant A	Yes
Profit a prendre	S		Yes	Profit a Prendre A	Yes
Carbon Abatement Interest	S		Yes	Carbon Abatement Interest A	Yes

Note: Leases within a building may use a sketch in certain circumstances

Table 3-4 Explanatory plan actions

See the *Registrar of Titles Directions for the Preparation of Plans*, Part 20 'Explanatory plan'.

Secondary interest	*Land Title Act 1994*	*Land Act 1994*
Lease	Yes	No
Easement	Yes	Yes
Covenant	Yes	Yes
Profit a prendre	Yes	Yes

Note: Registrar of Titles consent required in first instance for any Explanatory Plan.

3.18 Dimensions

Standard under the SMI Act

See section 3.6.5 *Severances and part lots*, page 17.
See section 3.11 *Compiled plans and boundaries*, page 24.
See section 3.13 *Connection of surveys and detached lots*, page 28.
See section 3.19.2 *Easements—surveys of long line easements—Specific requirements*, page 34.
See section 3.27 *New lot boundaries intersecting registered secondary interests*, page 49.
See section 3.43 *Unsurveyed and/or calculated boundaries*, page 70.
See section 3.44 *Vincula*, page 71.
See section 3.45 *Part lots*, page 72.
See chapter 4 *Physical feature boundaries*, page 73.
See section 9.6 *Bearings*, page 122.
See section 9.8 *Calculated lines*, page 124.
See section 9.37 *Original dimensions*, page 145.
See section 9.43 *Roads*, page 147.
See section 10.5.1 *Esplanades*, page 157.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 10.12.2 'Dimensions to be shown'.

Complete dimensions, including the total 'through' distance for every new or reinstated boundary (e.g. lot, secondary interest, or road parcel), must be unambiguously shown on the face of the plan. The use of station numbers to unambiguously show the through distance is acceptable.

Distances shown on plans must be corrected so that they are a horizontal distance at the mean terrain height of the line, (section 48B of the *Land Title Act 1994*).

With the ability to use multiple sheets, boundary dimensions must not be tabulated (except for the use of points tables on physical feature boundaries and complex volumetric format plans). Tabulation is acceptable to depict the location of line pegs.

In a subdivision where a number of identical lots are created adjacent to each other, the bearing and distance must be shown on all lines.

A bearing on a line with multiple segments must indicate explicitly the bearing for each line segment, by showing the bearing against each line segment, or by indicating the stations between which the bearing applies.

With the introduction of single line areas, the concept of excluding roads etc. from a parcel no longer applies. The same parcel now consists of several severances, which together make up the whole parcel. Every severance of the subject land is required to be fully dimensioned. The following special cases apply for existing internal roads and railways:

1. Where a road has been surveyed on one side only and the opposite side of the road has not been marked, the unsurveyed side of the road does not require dimensioning. The road width must be shown. In such circumstances, the lot will have a balance area.
2. Where a road has been surveyed on one side and the opposite side of the road has been marked, the opposite side of the road must be calculated and dimensioned.
3. Where a road has been surveyed on both sides, the road must be dimensioned.
4. In land other than freehold, internal roads unsurveyed on both sides do not require dimensioning.

5. In cases 1–3 above for heavily congested plans, dimensions need not be shown for internal roads and railways provided that all plan catalogue numbers from which this data can be obtained are shown. The road width must be shown where applicable.

See section 9.43 *Roads* for the method of showing internal roads.

Any balance distance must be deduced from the plan from which the title or deed was issued. However, where the dimensions of the balance are found to be imperfect, or a calculated area is to be adopted, data may be sourced from any registered survey in order to determine the boundaries of the parcel.

No line is to show two distances or bearings between the same two corners.

3.19 Easements—surveys of long line easements

Standard under the SMI Act

See section 3.14 *Coordinates*, page 28.
See section 3.22 *Large scale land development surveys*, page 41.
See section 3.28 *Permanent survey marks and connection to datum*, page 50.
See chapter 8 *Surveys using Global Navigation Satellite Systems (GNSS)*, page 110.

Surveys of easements should generally be carried out to the same standard as other cadastral surveys.

In recent years there has been a significant increase in easements for infrastructure corridors (e.g. gas, water, and slurry pipelines) in remote/rural areas. These easements range from a few kilometres to many tens of kilometres in length. Many of the road and property boundaries in these remote/rural areas may be unsurveyed. These infrastructure corridors provide an opportunity to integrate the cadastre across large tracts of remote/rural land and assist in developing a homogeneous coordinate system.

Further infrastructure development in remote/rural areas may lead to the need to identify other long-term interests in land. The following are **minimum** requirements that should apply to all long line cadastral surveys.

3.19.1 Basic criteria

- The marking of the survey must be such that the property owner can unambiguously identify the easement.
- All corners must be capable of reinstatement and be appropriately marked.
- The survey must be capable of unambiguous interpretation.
- The existing cadastre must be maintained and enhanced.
- The requirements of the *Survey and Mapping Infrastructure Act 2003* must be met in relation to the placement of permanent survey marks.

3.19.2 Specific requirements

- Intersections with the underlying cadastre are to be marked according to the *Survey and Mapping Infrastructure Act 2003* (i.e. with boundary marks and reference marks). This applies to both existing surveyed and unsurveyed boundaries.
- The existing cadastre, where it is reinstated, is to be preserved and additional reference marks placed wherever possible to enhance the cadastre.
- Boundary marks and reference marks are to be placed at bend points along the corridor, as well as at appropriate spacings along the corridor. Appropriate spacings for boundary marks and reference marks are at nominal 3 kilometre intervals.
- Permanent survey marks (e.g. star pickets with concrete collars, marks in ‘above ground’ structures) are to be placed or located at strategic locations along the corridor, such as at boundary intersections, bends points or at nominal 5 kilometre intervals.

- The boundary marks would normally include pegs or alternative durable marks. Reference marks are to be placed in accordance with best practice. Consideration should be given to placing a range of subsurface and visible surface marks (including connections to above ground structures within the infrastructure corridor). This is considered to be particularly applicable on surveys of large extent.

  The use of reference trees and blazed trees can assist in the reinstatement of surveys in remote/rural areas. However, surveyors should be aware that in some localities the taking of reference trees and the blazing of trees may be prohibited or not prudent for a range of reasons, including landholder, environmental and aboriginal cultural heritage reasons.

- The survey must be connected to the State control survey (refer to section 3.28 *Permanent survey marks and connection to datum* for methods of connection).

- Where GNSS is used as part of the cadastral survey, the requirements of chapter 8 *Surveys using Global Navigation Satellite Systems (GNSS)* still apply.

- Where coordinates are shown on cadastral corners, the requirements of section 3.14 *Coordinates* still apply.

- Where the boundaries of the easement are established by running the centre line or a single traverse line along the corridor or through GNSS observations, the boundaries are to be shown as surveyed and not as calculated.

3.20 Encroachments and improvements on or near a boundary

Standard under the SMI Act

See section 3.11 *Compiled plans and boundaries*, page 24.
See section 3.23.5 *Survey mark information on plans*, page 45.
See section 3.33.1 *Cadastral Reinstatement Standard*, page 56.
See section 9.7 *Buildings and other improvements on or near a boundary*, page 123.
See Appendix G *Land Services – General Contact List*, page 203.
See sections 12, 13, 19 and 20 of the *Survey and Mapping Infrastructure Regulation 2024*.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 9.20 'Encroachments'.
See departmental policy *Roads under the Land Act 1994 SLM/2013/725*,
<www.resources.qld.gov.au/?a=109113:policy_registry/roads-under-land-act.pdf>.

There are a number of provisions of the Survey and Mapping Infrastructure Regulation 2024 regarding improvements on or near the boundary:

1. Section 12(2)(a)(i) provides for the recording of information about permanent improvements on the land that are used as reference points for the survey.
2. Section 13(1) provides some examples of "a party affected by the boundary".
3. Section 13(2)(e) requires any encroachment to be identified and the owner to be notified where a substantial encroachment exists.
4. Section 19 requires the position to be recorded of any encroachment, and any permanent improvement that affects, or is affected by, a reinstatement.
5. Section 20 requires that the owner of land who may be adversely affected by a reinstatement be notified.

3.20.1 Improvements

The size, nature and location of all improvements that are permanent in nature on or near any new or reinstated subject boundary, must be shown on all survey plans lodged for registration or submitted to the department. Guidelines for depiction of these on plans are given at section 9.7 *Buildings and other improvements on or near a boundary*. This requirement does not apply to building format lots or secondary interest lots.

Improvements include buildings, parts of buildings such as awnings or gutters, fences, retaining walls and earthworks such as irrigation channels or dams. A surveyor is to use professional judgement in assessing the proximity that constitutes near the boundary, having regard for improvements located within the planning offsets under a State planning instrument. Where the improvement is an irregular construction, such as a rock retaining wall, the outermost projections of the construction must be located.

3.20.2 Encroachments

An improvement may also be an encroachment.

Encroachments are any improvements that fall under the definition within the *Property Law Act 1974* (i.e. encroachment by a substantial building, or wall, of a permanent character, including encroachment by overhang of any part as well as encroachment by intrusion of any part in or upon the soil). Whether a structure is a building for the purposes of section 184 of the *Property Law Act 1974* is determined on a case by case basis.

Encroachments do not include dividing fences as defined under the *Neighbourhood Disputes (Dividing Fences and Trees) Act 2011* (that is, a fence on the common boundary of adjoining lands), and also do not include a fence that has been constructed by an owner wholly within their own lot.

However, Courts have determined that a fence can be an encroachment (that is, a fence that is not wholly on the common boundary), but only where it is of a substantial and lasting character that can't be remedied as a mere trespass (that is to say, that can't be dealt with under the *Neighbourhood Disputes (Dividing Fences and Trees) Act 2011*). By way of example, Carter J in Ex parte Van Achterberg [O.S. 2/1983] found that a new weldmesh fence incorporating a large business advertising sign supported by steel posts set in concrete foundations of up to two feet deep and one foot wide was both substantial and permanent and could be dealt with as an encroachment, but that not every encroaching picket fence or proverbial 'tin shed' will qualify to be dealt with as an encroachment, as 'it will always be a question of degree to be determined by reference to the facts and circumstances of the individual case'.

Courts have also determined that any structure that retains cut or fill (i.e. a retaining wall) meets the criteria for encroachment.

Encroachments or permanent improvements previously shown on other plans are not required to be shown where subject boundaries are compiled. However, the cadastral surveyor must ensure that any encroachments or other improvements that may affect future dealings are appropriately identified and shown on the survey plan. These may be compiled from original information on compiled subject parcel boundaries, providing that the improvement is still extant at the time of the survey. Refer to section 3.11 *Compiled plans and boundaries* for fully compiled plans.

3.20.3 Notifications

A surveyor must notify the owners of any affected property where any encroachment exists on a reinstated boundary that is greater than the uncertainty of the survey. However, notification is not required where the encroachment is onto land administered by a local authority that has approved such a structure as part of a development approval (for example, an existing shop awning over the footpath or a driveway from the property boundary to the road pavement).

In addition to encroachments, a surveyor must also notify the owner of any property that may be adversely affected by the reinstatement of a boundary. Such circumstances might arise where a retaining wall exists on or near the boundary and it is not apparent as to which property constructed the wall.

Nothing in this section prevents a surveyor from advising an affected owner as to the location of any other improvements on or near a reinstated boundary. (See section 3.33.1 *Cadastral Reinstatement Standard).*

This notification requirement applies to any reinstated (field surveyed) subject parcel boundaries. This includes encroachments and permanent improvements previously shown on other plans, even where notifications have already been sent.

For reinstated subject parcel boundaries, if an encroachment from an adjoining parcel is shown on the subject land **or** if there is an encroachment from the subject parcel onto an adjoining parcel **or** if some other permanent improvement is affected by the reinstatement, the surveyor should either:

- in the case of a plan to be lodged for registration, following notification of affected owners, place a note on sheet 2 of the plan in the form of:

  Notification issued to the owner(s) of Lot # on SP###### and XXXX Road on dd/mm/yyyy, in accordance with the Survey and Mapping Infrastructure Regulation 2024

  or

- in the case of an identification survey:
    - without delay, take all reasonable steps to give any affected owner written notification of the intention to submit the plan with the reinstated boundary, and
    - place a note on the plan in the form of:

      Notification issued to the owner(s) of Lot # on SP###### and XXXX Road on dd/mm/yyyy'

      or words indicating the action taken to advise the affected owner.

Notifications affecting State land (including public use land, road) must be referred to the department, via the senior land officer in the local departmental office. See the table at Appendix G for the relevant email address of each local departmental office.

3.21 Identification surveys

Standard under the SMI Act

See section 3.4 *Accuracy*, page 12.
See section 3.20 *Encroachments and improvements on or near a boundary*, page 35.
See section 3.33.1 *Cadastral Reinstatement Standard*, page 56.

An identification survey is a cadastral survey carried out for the purpose of identification, re-establishment, marking or re-marking existing land or water boundaries. Identification surveys are to comply with all standards in this document unless indicated otherwise. Where an identification survey is for only part of a parcel, standards that require boundaries to be marked or dealt with in a certain way only apply to those boundaries and corners that have been chosen to be surveyed. No interests are created or altered as a result of these surveys as they are not lodged in the land registry.

In accordance with section 16 of the *Survey and Mapping Infrastructure Act 2003*, a surveyor must give the chief executive a copy of the survey plan within 40 business days of carrying out an identification survey.

An identification survey may also be conducted to satisfy section 42(1)(c)(i) of the *Survey and Mapping Infrastructure Act 2003* to establish the relationship between survey marks, some of which are to be destroyed. Such a plan will require the adjoining descriptions to be part of the description field. For example:

Reference marks affecting Lot 1 on SP123456 and adjacent to Lots 5 & 8 on SP123667

There are situations where an identification survey is conducted to identify cadastral boundaries of multiple lots or an extensive area to resolve complex reinstatements or encroachments (for example, preparatory surveys for large scale resumptions, preservation of survey infrastructure (POSI), problem survey areas, multiple lot encroachments, pre-construction designs, etc). In these situations, it may be inappropriate to re-mark the cadastral corners, and are considered not to be in contravention of section 12 of the Survey and Mapping Infrastructure Regulation 2024. If there is doubt as to whether it would be appropriate for a specific situation, advice can be sought from the department. Any plan conducted in this way will require a clear statement on the face of the plan indicating that cadastral corners have not been re-marked. For example:

No marks placed at cadastral corners unless otherwise stated.

Identification surveys may be subject to an audit by the department. Details of identification surveys are recorded in State datasets and linked to the parent parcel. It is acceptable for a surveyor to endorse an identification survey to assist with version control.

It is important for the maintenance of the integrity of the cadastre that identification survey plans show all of the survey information relied on for the purpose of reinstating the boundaries of the subject land, including the existing reference marks and any new marks placed.

There is nothing to prevent surveyors from preparing a special additional plan responsive to an individual client's needs. This additional plan does not need to be part of the public record but could be based on a subset of the information presented on a formal identification survey plan prepared for submission to the department. Any identification survey should demonstrate that relevant legislation, including the *Surveyors Act 2003* and the *Survey and Mapping Infrastructure Act 2003*, is satisfied.

An identification plan must display the following, as a minimum:

- a full description of the subject parcel in the title block
    - for primary interests, the lot-on-plan being identified
    - for secondary interests, the lot-on-plan of the parent parcel and the secondary interest being identified
    - where reference marks are being placed or identified, the adjoining lot-on-plan descriptions
- sufficient detail to be enable recording in State datasets and linking to the parent parcel existing at the time of the survey. Where a parcel being identified does not yet exist, for example a lot on a DP that is not yet registered, the plan description must include the underlying registered parcel. For example, 'Identification survey of Part of Lot 1 on SP123456 (Lot 4 on DP456789)', where Lot 1 on SP123456 is the original parcel and Lot 4 is the description of the lot on DP456789.
- a survey report addressing the reinstatement
    - if the plan identifies the current location at law of a water feature boundary, a survey report addressing the relevant components of 4.5 *Reporting requirements for surveys*
- Form 13, issued under the *Survey and Mapping Infrastructure Act 2003*
- survey data in a manner that satisfies general plan presentation requirements on A3 sized paper including:
    - dimensions for all surveyed boundaries
    - marks placed and marks found
    - north point
    - scale bar
    - sheet numbering. Each sheet must be numbered consecutively in the top right hand corner commencing with 1 on the first sheet and each sheet must show the total number of sheets.
    - the department's barcode embedded in the bottom right hand corner with the plan held in portrait mode, immediately adjacent to the margin
    - plan numbers on additional sheets. For each additional sheet, the plan number must be shown in the bottom right hand corner.
    - locality
    - local government.
- all changes made to the plan since originally submitted to the department along with the relevant amendment certificates.

An identification survey that identifies an entire parcel may show an area. If shown, it is to be the calculated area. Multiple areas must not be shown. Any discrepancies between the surveyed and title areas can be addressed in the survey report.

3.21.1 Placement of additional marks on subdivision surveys

See section 3.20 *Encroachments and improvements on or near a boundary,* page 35.
See section 3.22 *Large scale land development surveys*, page 41.
See section 3.23.2 *Reference marks*, page 44.

Surveyors dealing with subdivisions that involve considerable earthworks must mark all subject corners but may lodge plans for registration that do not show all of the reference marks that are intended to be placed as part of the survey. Sufficient and suitable reference marks must still be placed, in accordance with section 3.23.2 *Reference marks*. Once lodged in the land registry, the original plan is unable to be amended unless it contains an error. An identification survey must then be submitted to the department to record the additional marks associated with the subdivision.

The original plan of survey must be noted on the face of the plan with the identification survey number, with a note similar to:

Additional reference marks to be placed following road construction (see IS######).

The surveyor must submit a final copy of the identification survey within 40 business days of the registration of the original plan of survey, or prior to the commencement of the 'on maintenance' period for the development works, whichever is the latter. Surveys conducted under section 3.22 *Large scale land development surveys* are not required to mark cadastral corners prior to lodgement of the plan/s for registration. Full marking of corners, including reference marks, and a subsequent identification survey plan is required to be submitted to the department prior to the commencement of the 'on maintenance' period for the development works.

Where an identification survey plan is used to record marks placed following the registration of a plan of subdivision, the identification survey plan may be either a plan of only those lots for which corner marks and/or additional reference marks are placed or a reproduction of the registered survey plan annotated with the additional mark information. Where no additional marks are placed on the balance lot, then the balance lot does not need to be part of the identification plan. The requirements for identification survey plans produced by either method are that:

- all new corner marks placed must be stated in a statement on the face of the plan in the form of:

  Pegs placed at stations # – # after registration of SP######

- any new or additional reference marks must be tabulated.
- the tabulation must clearly state (as appropriate):

  Additional reference marks placed after registration of SP######

  Reference marks placed after registration of SP######

In addition to the above requirements, for plans produced by the annotated registered survey plan method the following requirements are that:

- the original Form 13 certificate must be ruled through and a new, correctly executed, Form 13 added to the plan.
- the title must indicate (as appropriate) that the plan is an:

  Identification survey of additional reference marks affecting Lots # on SP######

  Identification survey of marks affecting Lots # on SP######

- an identification plan number barcoded label (IS prefix number) must be attached or embedded in the plan number box of the plan being submitted to the department.

The identification plan can also include adjoining descriptions as part of the description field. For example:

Additional reference marks affecting Lot 1 on SP123456 and adjacent to Lots 5 & 8 on SP123667

3.21.2 Preservation of Survey Infrastructure (POSI)

Information

See section 3.23.3 *Cadastral survey marks,* page 44.
See section 3.28.1 *Connection to datum,* page 50.
See departmental policy *Completion of Permanent Survey Mark Plans SIG/2013/427,*
<www.resources.qld.gov.au/?a=109113:policy_registry/completion-permanent-survey-mark-plans.pdf&ver=1.07>.

Interfering with a survey mark without a reasonable excuse is an offence under section 42 of the *Survey and Mapping Infrastructure Act 2003*. For permanent survey marks, the department must be notified of any reports regarding interference or requests for authorised removal of a mark.

If a project you are undertaking is likely to interfere with a permanent survey mark, email GeodeticSupport@resources.qld.gov.au with details of the mark and the project. An assessment will be made to determine the impact of the interference on the state geodetic control network and the cadastral framework and whether any survey work is required before the mark is disturbed.

Standard under the SMI Act

Where interference with cadastral survey marks (other than a recognised permanent survey mark) is to occur, section 42(1)(c)(i) of the SMI Act requires a survey to be carried out to establish the relationship between the marks

subject to interference and at least two recognised permanent survey marks. The plan of the survey must be submitted to the department prior to the interference occurring.

Surveys for preservation of survey infrastructure (POSI) are to be carried out where there is potential for interference with cadastral survey marks. Where a survey is carried out for POSI, it is necessary to connect to all cadastral survey marks within the area subject to interference. Affected cadastral marks may include boundary marks, reference marks, permanent survey marks, and referenced occupation suitable for future reinstatement (see 3.23.3 *Cadastral survey marks*). The survey must reinstate significant boundary corners at regular intervals sufficient for future reinstatement and show connections to the affected survey marks. Consideration can be given to placing additional reference marks and providing sufficient measurements to reestablish the cadastre after the interference. If an identification survey is conducted for POSI purposes, it is not necessary to mark boundary corners.

The survey must connect to at least two recognised permanent survey marks that will remain after the interference occurs. The permanent survey marks must be of good geometry spanning the survey (i.e. near the extremity on diagonally opposite ends of the survey). If recognised permanent survey marks do not exist in suitable locations, new permanent marks must be established. The inclusion of more than two permanent survey marks is required, depending on the size and nature of the survey (i.e. additional permanent survey marks placed to achieve a nominal density of one permanent mark every 250 metres). Connection to datum is required in accordance with section 3.28.1 *Connection to datum*. In the context of a POSI survey, connection to datum is required where (a) the survey marks subject to interference relate to 10 or more lots; or (b) the extent of the survey, including connections to permanent marks, is more than 2 kilometres. All other standards relevant to cadastral surveys apply.

To ensure that an identification survey plan for POSI appears in survey searches, the plan title must contain a list of all adjacent parcels to enable correct linkages. If the space available on the first sheet is insufficient to show all necessary parcels, the second sheet may be used. Examples of identification surveys carried out for POSI can be provided on request via email to SurveyAdvice@resources.qld.gov.au.

Example scenarios:

Scenario 1 – Small-Scale Interference

A local authority is to perform remediation works around a street corner to replace a pram ramp and footpath. These works will disturb all cadastral survey marks in the vicinity. Recognised permanent survey marks exist nearby, located in the adjoining streets.

An identification survey for POSI is performed to capture the evidence of the existing cadastral survey marks prior to the works being undertaken. The POSI survey plan will show the reinstated street corner with reference to the cadastral marks that may be subject to interference, along with connections to the two existing permanent survey marks located in suitable proximity of the survey and outside the expected areas of works.

The surveyor decides to place additional recovery marks external to the area of works to assist future boundary reinstatement. Connection of the POSI identification survey to datum is not mandatory under section 3.28.1 *Connection to datum*, as the area of interference affects four lots and the extent of the survey, including connections to permanent marks, is less than two kilometres. Where not required, connection to datum may still occur where it provides additional value to the survey.

Scenario 2 – Large-Scale Interference

A constructing authority is to upgrade the surrounding roads around an entire urban section. All surface marks will be destroyed. There is a high probability that all sub-surface marks will also be destroyed.

An identification survey for POSI is performed to capture the evidence of existing cadastral marks prior to the infrastructure works being undertaken. The POSI survey plan will show reinstated boundary corners at road intersections and bends, along with any other significant evidence (e.g. corners with long standing occupation, original portion boundaries where appropriate, changes in road alignment or other historically important corners) throughout the proposed extent of interference. The plan will show these reinstated corners with reference to the cadastral marks subject to interference. Connections to permanent survey marks are also shown. The surveyor decides to place additional recovery marks outside the area of works to assist future boundary reinstatement.

Two existing permanent survey marks are located at opposite ends of the northern side of the section. The POSI survey establishes two new permanent survey marks outside the expected area of works at the intersection of roads on the southeast and southwest corners of the section. This ensures good geometry and sufficient density of marks.

Connection of the POSI identification survey to datum is required under section 3.28.1 *Connection to datum*, as the

area of interference affects 26 lots, even though the extent of the POSI survey, including connections to permanent marks, is less than two kilometres. To connect the survey to datum, the permanent survey marks on diagonal corners of the longest span of the section are coordinated using AUSPOS, with the permanent survey mark information submitted to the department in accordance with the departmental procedure *Completion of Permanent Survey Mark Plans SIG/2013/427*.

3.21.3 Amendments to identification surveys

Standard under the SMI Act

Any amendments or changes to identification survey plans after the plan validation process and CISP entry are to be made by strikeout and/or addition only. A certificate of amendment must be shown on the plan and signed by the surveyor.

Where the amendment is such that a replacement sheet is warranted, the erroneous sheet is to be fully cancelled by strikeout and the replacement sheet is to be inserted. The overall page count of the plan must increase, and the existing sheets must be amended to reflect the increase in number of sheets to the plan.

A certificate is to be added in the following form:

Example Certificate of Amendment - Individual:

Amendments by me

Cadastral Surveyor …… (Date)……

Example Certificate of Amendment - Corporation:

Amendments by (corporation name) (ACN or ABN Number)

Designation…… (Date)……

Where the cadastral surveyor is a corporation, the certificate of amendment may be executed in a manner similar to the manner in which a corporation executes a Form 13 or a Form 18. The corporation's seal is not required.

Amendments to a surveyor's certificate (e.g. Form 13, Form 18, Direction 9.20.7) are not covered by the certificate of amendment. No part of the surveyor's certificate may be amended or deleted. A new surveyor's certificate must be shown on the face of the plan immediately above the original certificate which will have been struck out. If space does not permit, the new certificate may be shown on an additional sheet and the overall page count of the plan increased, and the existing sheets must be amended to reflect the increase in number of sheets to the plan.

The amended version is to be submitted with the department. Plans with duplicated content but different plan numbers must not be submitted.

3.22 Large scale land development surveys

Standard under the SMI Act

See section 3.14 *Coordinates,* page 28.
See section 3.21 *Identification surveys,* page 37.
See section 3.23 *Marking,* page 42.
See section 3.24 *Meridian,* page 48.
See section 3.28 *Permanent survey marks and connection to datum,* page 50.
See chapter 8 *Surveys using Global Navigation Satellite Systems (GNSS),* page 110.
See departmental policy *Large scale land development surveys (Procedure) SIG/2016/3409,*
<www.resources.qld.gov.au/?a=109113:policy_registry/large-scale-land-development-surveys.pdf>

This standard applies to large scale land developments that are planned and executed using an integrated survey approach based on a coordinate framework connected to the State control survey[2]. It can be adopted where:

- there are at least 20 proposed standard format lots in the development site as a whole (irrespective of how many lots are created in each stage), or there is a lot or series of lots that span more than 1km; and

- the coordinate framework will provide the basis for defining and recording all aspects of the development project, to ensure the relationship between the cadastre and the works and services are well known; and
- a properly made application is made to the chief executive[5] in accordance with the departmental policy *Large scale land development surveys (Procedure) SIG/2016/3409*; and the application is approved with or without conditions.

The specification is as follows:

- a coordinate framework is to be established and connected to the State control survey in accordance with a survey control design agreed to by the chief executive
- a surround survey of the development area is to be carried out, with coordinates determined in relation to the coordinate framework with a survey uncertainty of <15mm for horizontal position
- the design and construction of works and the design of lot boundaries is to be related to the coordinate framework
- coordinates are assigned to all lot corners following a rigorous adjustment of the surround survey by a method agreed to by the chief executive, and included as field records with the survey plan submitted to the department.

It is not a requirement to mark cadastral corners prior to lodgement of the plan/s for registration, subject to the following conditions:

- full marking of corners must be completed prior to the time at which the planning authority or local government certifies that the development stage is 'on maintenance'
- evidence verifying the position of the corner marks placed must be included in the survey records of the subsequent identification survey plan, and include connection to the State control survey[2] for at least two (2) corner marks (see section 3.28 *Permanent survey marks and connection to datum*)
- the plan shows connections to the State control survey that provides the basis for the corner coordinates (see section 3.14 *Coordinates*)
- the plan bears a notation along the following lines:

  In accordance with section 3.22 of the Cadastral Survey Requirements, corners have not been marked. For corner marks and reference marks see IS######.

3.23 Marking

See section 9.7 *Buildings and other improvements on or near a boundary*, page 123.
See section 9.15 *Corner information*, page 126.
See section 9.27 *Line pegs*, page 140.
See section 9.52 *Traverses*, page 150.
See the *Registrar of Titles directions for the preparation of plans*, Direction 9.6.2 'Where the horizontal boundaries of lots or part lots in or on building or structure are'.
See the *Registrar of Titles directions for the preparation of plans*, Direction 10.9 'Marking of volumetric parcels'.
See Part 4 of the *Survey and Mapping Infrastructure Regulation 2024*.

3.23.1 Boundary marking

Information

Section 12 of the Survey and Mapping Infrastructure Regulation 2024 establishes the following principles for the marking of boundaries on a cadastral survey:

> *'3) A boundary of land must be marked on the land in a way that a person on the land can identify the boundary.*
>
> *4) However, subsection (3) does not apply if—*

[5] References in this standard to the chief executive include reference to the person who is the chief executive's delegate under section 19 of the *Survey and Mapping Infrastructure Act 2003*.

(a) the client of the surveyor marking the boundary gives the surveyor written notice that the client does not require the boundary to be marked as required by subsection (3); and

(b) the surveyor complies with the relevant survey standard when marking the boundary of land; and

(c) the reference points used for the survey include a recognised permanent survey mark.'

It should be noted that the reference in section 12(4)(a) to 'marking the boundary' is a reference to marks along the boundary between the end points (e.g. line pegs, clearing, blazing of trees). It does not remove the need to mark the end points (i.e. the corners)—see the standard below.

Standard under the SMI Act

While it is recognised that many boundaries are not physically run, but are determined through traverses, offsets and in some instances through GNSS observations, all boundaries must be surveyed and marked in accordance with the requirements of Part 4 of the Survey and Mapping Infrastructure Regulation 2024. Therefore, the requirement to mark the boundary between the end points is necessary when a person cannot readily identify where the boundary lies between those end points. The length of the boundary and topography between the end points will determine if line pegs, clearing or tree blazing is required to satisfy section 12(3) of the Survey and Mapping Infrastructure Regulation 2024.

Regardless of whether intermediatory marking is placed along a boundary or not, the following requirements apply to the marking of cadastral corners (the end points of each boundary):

- A surveyor must mark all existing corners on the subject land that are reinstated in the course of a survey, unless:
  - an original mark exists at the corner, or
  - occupation exists at the corner that prevents the corner being marked, or
  - it is otherwise physically impractical to do so, or
  - the survey is an identification survey where a client requires certain corners marked only.

  There are instances where revisiting these corners to mark them may be impractical, such as when traversing to an existing mark, many corners away. In such cases, as a minimum requirement, when a new boundary intersects an existing lot boundary, both terminal points of that existing boundary must be marked unless one of the following applies:
  - the terminal points are not fully reinstated, for example where other marks are used for reinstatement along the boundary (e.g. original line pegs)
  - the survey is a secondary interest action only, the preference is for terminal points to be marked, however for rural or long line easements, a reference mark placed in close proximity (e.g. within 2 metres) to each corner will be sufficient.
- Recognisable survey marks must be placed at each new corner unless it is physically impractical to do so.
- Physically impractical means instances where it is not possible or unsafe to place a mark and is intended for cases where the subject corner is situated in the air, underground, under water, within an excavation or structure, or where the survey mark would create an on-going danger, or where the corner cannot be accessed. Where a corner is located on the other side of a fence, it does not meet the physical impracticability test and is required to be marked, unless access to the property on which the corner mark needs to be placed is restricted (e.g. inside a secure facility) or access has been denied.
- Where a subject corner at ground level is required to be marked and is not able to be marked because it is physically impractical to do so, line pegs and/or reference mark/s must be placed so that these marks can be used to determine the unmarked corner. Such line pegs or reference marks must be placed and identified so that they cannot be mistaken as being the corner mark. The survey report must contain an explanation of why any subject corner is not able to be marked.
- A clear description of cadastral survey marks placed, including reference marks, must be shown on the plan, and where applicable in the survey records. For each unmarked subject corner at ground level, a diagram showing the line pegs and/or reference marks placed in relation to the unmarked corner must also be shown on the plan.

- Where a survey is under section 12(4) of the Survey and Mapping Infrastructure Regulation 2024, the relevant survey standard for the marking of the corners is the standard for surveys of land in remote areas (see section 3.34 *Remote area surveys*).

3.23.2 Reference marks

Standard under the SMI Act

A cadastral surveyor must ensure sufficient and suitable (location, type, durability) reference marks exist on a cadastral survey to facilitate future reinstatement of a cadastral survey. A surveyor is to use professional judgement in assessing what constitutes sufficient and suitable reference marks, having regard for the number of marks required the future reinstatement of boundaries in the area and the likelihood of preservation of such marks. (See section 3.23.7 *Guidelines for reference marking*).

A cadastral surveyor must record the location of permanent improvements (e.g. buildings, retaining walls) on the land that will assist in the future reinstatement of boundaries.

3.23.3 Cadastral survey marks

Standard under the SMI Act

A cadastral survey mark that identifies a boundary must be a peg capable of resisting destruction, corrosion or decay that is at least 350 millimetres in length, is coloured white and has a square top with a minimum cross-section of 50 millimetres for a sufficient distance from the top to provide for branding.

If a surveyor considers that it is impracticable or unsuitable to use a mark of this type, the surveyor may place a survey mark of equivalent durability and stability, and as far as practicable, of a similar character so that they are recognisable as cadastral boundary marks (for example, if pegs are placed, then they must not be oblong or a colour other than white).

A cadastral survey mark may be any of:

- a suitably marked tree or fence post
- a durable mark on a building or other immovable object
- a pin made of a durable material that is at least 300 millimetres in length and 15 millimetres in diameter
- a permanent survey mark
- any other mark of equivalent durability and stability.

Factors to consider when placing survey marks are:

- public safety
- standard forms of marking
- recognition of a mark as a survey mark
- durability—expect 60+ years
- clear and unambiguous
- reference marks
- line pegs
- occupation.

3.23.4 Other survey marks

Standard under the SMI Act

A survey mark that does not identify a boundary must not have a square cross-section, and must be sufficiently different to avoid confusion with a cadastral boundary mark (e.g. 3:2 cross-section ratio).

3.23.5 Survey mark information on plans

Standard under the SMI Act

Survey plans must show clearly, unambiguously and in as consistent a manner as is possible all relevant information regarding the marks found or placed on the survey and other boundary evidence relied on for the survey. This includes the marks representing a corner (both original corners and new corners), the marks referencing a corner, and the occupation present at a corner. Specific requirements are as follows:

- All marks recovered, found or placed at a corner that is reinstated or established by a survey must be described.
- When the origin of the corner mark or reference marks recovered at the corner is known, the term 'original' (abbreviation 'O') must be used.
- When the origin of the corner mark or reference marks found at the corner is unknown, the term 'found' (abbreviation 'fd') must be used.
- Where the existing corner mark is found disturbed and the same mark is reset in the original corner position, the term 'reset' must be used. However, where the existing corner mark is removed and a new mark of the same type is placed at the original corner, the term 'renewed' must be used. The term 'replaced' must **not** be used on plans.
- Where the existing corner mark is removed and a new mark of a different type is placed at the original corner, the term 'placed' must be used.
- Where the survey establishes a new corner, the term 'placed' may be used. Marks placed at these corners are described either by statement on face or as corner information, but the description method must be consistent for all new corners.
- Where a new corner is inaccessible and hence is not able to be marked, the term 'No mark placed' with a suitable qualification must be used.
- Occupation present at or near all existing or new corners must be shown.
- All existing reference marks referenced to a corner must be described, except for those reference marks that have been shown as 'gone' on a previous plan or those that were not originally placed as a reference to that corner.

3.23.6 Guidelines for marking boundaries

Guideline under Standard 3.23.1 Boundary marking

Lot numbers should be marked on corner pegs.

For rural surveys, where a fence post is used as a corner it should be branded with a broad arrow and the lot number except where a reference tree is taken.

For rural surveys, alternate marks such as a survey post, a galvanised iron pipe or star picket may be placed at corners where circumstances so dictate, provided such marks are identifiable as survey marks.

New boundaries should be marked sufficiently to enable the boundary to be readily and unambiguously discernible on the ground at the completion of survey.

Where clearing is required to undertake the survey, this should be done in a way that minimises the impact on native flora and fauna (e.g. lopping of branches rather than removal of trees). Surveyors should be aware of Vegetation Protection Orders, Voluntary Conservation Management Agreements, cultural heritage legislation (*Aboriginal Cultural Heritage Act 2003*) and other environmental considerations (e.g. *Vegetation Management Act 1999*). Further information is given below in relation to clearing of vegetation for survey purposes.

Unless fencing is to proceed immediately, subject to environmental considerations, trees standing nearest to the line may be blazed with a horseshoe shaped mark cut into the heart-wood on opposite sides of the tree in such positions that the marks face along the survey line.

Trees through which the boundary line passes should be double blazed on opposite sides so that the marks face along the boundary line.

Where corner marks are not intervisible, sufficient marks should be placed on line between the corners so that the boundary is readily and unambiguously discernible on the ground.

3.23.6.1 Clearing of trees for survey purposes

Information

Vegetation Management is regulated through the *Vegetation Management Act 1999* (VMA) and the *Planning Act 2016*. General information about this legislation is available from the government website <www.qld.gov.au/environment/land/management/vegetation> including links to the legislation and the State policy for vegetation management.

The legislation regulates all clearing of native trees or plants, other than in State forests and national parks. Clearing of vegetation in State forests and national parks is governed by the *Nature Conservation Act 1992* and the *Forestry Act 1959* respectively.

The clearing of trees is primarily regulated by the VMA, but in certain cases it is also regulated by other state and federal acts. Other legislation is set up to regulate issues relating to vulnerable, endangered, threatened or rare plants and animals (such as the koala, see <environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/legislation-policy>), commercial timber trees and plants in and around watercourses. These acts include the *Water Act 2000*, the *Nature Conservation Act 1992*, the *Forestry Act 1959* and local council clearing rules. In some cases, permits may be required under multiple acts. As with all activities, it is vital to make sure that you are aware of the ownership of the land and its estate (e.g. trees on road reserves, unallocated State lands, neighbouring properties).

The South East Queensland Koala Conservation Strategy introduces planning controls to protect koala habitat in South East Queensland. The Planning controls (see schedule 10, part 10 of the Planning Regulation 2017) make development that involves "interfering with koala habitat" in an area that is both a koala habitat area and koala priority area "prohibited development", unless defined as exempted development under schedule 24 of the Planning Regulation 2017. Development that involves "interfering with koala habitat" in an area that is a koala habitat area but not a koala priority area is "assessable development", unless defined as exempted development under schedule 24 of the Planning Regulation 2017.

It should be noted that lopping of branches from trees is not regulated under the VMA, and as long as it meets the requirements of any koala habitat controls, surveyors are not prevented from lopping branches from trees as long as it does not lead to the death of the tree.

The type of clearing activity allowed, and how it is regulated, depends on; whether the land is within a designated Koala Habitat Area or Koala Priority Area; the type of vegetation; the tenure of the land; the location, extent and purpose of the proposed clearing; and who is proposing to do the clearing. Depending on these factors, clearing activities will be; exempt from any approval or notification process; require notification and adherence to a self-assessable code; require notification and adherence to an area management plan; require a development approval; or be prohibited.

Exemptions allow native vegetation to be cleared for a range of routine property management activities without the need for a development approval or notification.

On freehold land, indigenous land or leasehold land for agriculture and grazing the most important exemption provided in the VMA is for clearing vegetation in areas shown on a regulated vegetation management map or a regional ecosystem map as category X. In these areas, any tree can be destroyed or removed for any purpose as long as it done in accordance with the requirements of any koala habitat controls.

In areas shown on a regulated vegetation management map or a regional ecosystem map as category A (unless stipulated on a notice issued by the department), category B, category C or category R, there are exemptions that allow clearing activities.

- Any clearing mentioned in the list of exempt clearing work published on the government website < www.qld.gov.au/environment/land/management/vegetation/exemptions> is exempt.

- Clearing under a development approval, for a material change of use or reconfiguring a lot, is exempt if the approval is given for a development application for which the chief executive (administering *the Planning Act 2016 or its predecessor* the *Sustainable Planning Act 2009 (repealed)*) is a concurrence agency for clearing vegetation; or if a lot to which the application relates is less than 5ha, for which a local government is the assessment manager.
- Clearing that is necessary to carry out a cadastral survey of an **existing** property boundary, a geotechnical survey or a geological survey if the area cleared is – (a) for an area in which a survey is conducted—a maximum area of 10m by 10m; and (b) for an area necessary for reasonable access to an area mentioned in paragraph (a)—a maximum of 10m wide.

When carrying out surveying of a subdivision in areas mapped with categories other than as above, there is no exemption, or means to apply for a permit to clear trees for surveying. Surveyors operating in this scenario cannot destroy, remove, kill, poison, drive over, trample or burn any trees for the purpose of the survey, regardless of any planned land use activities in the area.

3.23.7 Guidelines for reference marking

Guideline under Standard 3.23.2 Reference marks

An efficient cadastral system necessitates that an adequate number of reference marks are placed on all cadastral surveys to enable the future reinstatement of lot boundaries. Reference marks placed by surveyors need to be durable and reliable.

The number, position, type and combination of reference marks should be placed in the course of a survey to maximise their longevity into the future. A variety of surface marks (permanent survey marks, nails, screws, drill holes, reference trees, building corners, etc.) and subsurface marks (iron pins, etc.) are to be utilised.

3.23.7.1 Iron pins

The positions and depths at which pins are placed should be decided by the surveyor in order to minimise the chance of disturbance from any cause. The depth at which the pin is placed should be recorded if the depth is excessive.

Where original iron pins are found, the depth of the pin should be recorded where the depth is excessive.

3.23.7.2 Rural areas

In rural areas, reference marks include reference trees (where there is little likelihood of the tree being destroyed in the foreseeable future), iron pins, and other appropriate marks.

Surveyors should have regard to the local environment when marking reference trees.

3.23.7.3 Urban areas

In urban areas, reference marks include iron pins, screws/nails in kerbing or manhole surrounds, corners of shops, buildings or other appropriate structures.

Surveyors should be aware that some electricity authorities are opposed to the placement of nails and other marks in power poles.

3.23.7.4 Estate development

In residential estate development, it is essential that an adequate number of reference marks are placed to allow for the future reinstatement of lot boundaries at a reasonable cost.

The number, position and type of reference marks placed will be in keeping with the needs specific to these developments. A variety of surface and subsurface marks (mark in kerb, pin, etc.) should be placed to minimise the destruction of reference marks by machinery and earthworks and to support future reinstatement.

Permanent survey marks should be placed to facilitate future coordination and reinstatement. This necessitates that there be a significant density of PSMs throughout the development, nominally at a density of every 250m, which would create a typical density of two new PSMs for every 100 residential lots.

3.24 Meridian

Standard under the SMI Act

See section 3.28 *Permanent survey marks and connection to datum,* page 50.
See section 9.17 *Datum,* page 136.
See section 9.32 *Meridian,* page 143.

Where a survey is connected to the State control survey[2], MGA bearings must be used to an accuracy of twenty seconds of arc, by derivation from points in the State control survey (such as coordinated CORS, permanent survey marks with datum lineage coordinates or derived lineage coordinates with suitable positional uncertainties) or from astronomical observations.

In all cases where the meridian is shown as MGA the relevant MGA zone must be shown.

Where a survey is not connected to the State control survey, MGA meridian is still preferred, but the survey may be on one of the following meridians:

- County Arbitrary Meridian (CAM)
- the meridian of the original survey
- the meridian of an adjoining survey.

Where a survey is not required to be connected to datum, but connects anyway (using permanent marks with datum lineage coordinates or CORS) in order to obtain MGA meridian, the survey must meet the full requirements of section 3.28 *Permanent survey marks and connection to datum*. It should be noted that all surveys using GNSS (whether to obtain MGA meridian or to survey boundaries), must be connected to datum for traceability of position, and therefore must be on MGA meridian.

When using terrestrial observations (e.g. total station) to connect to coordinated marks in order to obtain MGA meridian, permanent survey marks with **derived** lineage coordinates can be used, but care should be taken to ensure spacing and positional uncertainties (PU) are suitable for achieving a MGA meridian with an accuracy of twenty seconds of arc. When using terrestrial observations to connect to permanent survey marks with **datum** lineage coordinates in order to obtain MGA meridian, the survey is thereby connected to datum, and therefore must meet the full requirements of section 3.28 *Permanent survey marks and connection to datum*.

All survey information on any plan must be on one common meridian. A survey covering many plans must be on the same meridian (see section 9.32 *Meridian*).

A survey that includes boundaries compiled from other plans must bring those boundaries onto the same meridian. Where differences exist when more than one common boundary exists, the common boundary that provides the better closure must be adopted for the meridian swing.

The origin of the meridian must be noted in the meridian box on the front of the plan, or if insufficient space, in a meridian table on the plan.

Survey records may be supplied to support any determination of meridian, e.g. astronomical observations, GNSS information and adjustments. Information from the Survey Control Register is not required to be repeated in survey records.

It is no longer a requirement to note any line on the plan as ‘datum’. However, if considered necessary, a line on the plan may be noted as datum.

3.24.1 Meridian from State control survey

Guideline under Standard 3.24 Meridian

Where a survey is connected to datum (i.e. it is connected to the State control survey[2] in accordance with section 3.28.1 *Connection to datum*) and coordinates are determined for marks within the survey in accordance with section 3.14 *Coordinates*, the accuracy of the derived MGA bearings are dependent on the distance between those marks. If those coordinates had horizontal positional uncertainties at the upper limits allowed in section 3.28.1 *Connection to datum*, the marks would need to be in the order of 500m apart to provide MGA bearings to an accuracy of twenty seconds of arc.

There will be surveys that are connected to datum that will not extend 500m, in which case a surveyor

would need to consider two options to achieve MGA bearings to an accuracy of twenty seconds of arc:

- achieve a lower positional uncertainty on the marks; or
- establish marks some distance from the survey.

However, it is sufficient to satisfy the survey integration intent of 3.28.1 *Connection to datum*, and section 3.24 *Meridian*, by establishing coordinated marks with positional uncertainties that satisfy section 3.28.1 *Connection to datum*, at the extremities of the normal survey (not artificially extended). The MGA bearings derived from those coordinates may then be used, even if that does not provide an accuracy of twenty seconds of arc.

3.25 Native title

Information

When acquiring native title rights and interests, as per the *Acquisition of Land Act 1967* (or similar legislation), a sketch plan may be used (e.g. AP); however, if, in the future, native title rights and interests are proven to have existed over the subject land, a plan of survey **may** be required for clarity and certainty.

Where a plan is prepared for any purpose and that plan adequately describes the area subject to the native title rights and interests, no additional plan is required to address those native title rights and interests (e.g. native title rights and interests in Easement A in Lot 5 on RP123456 would be satisfactory for addressing native title rights and interests, as well as recording the easement).

The surveyed status of any parcel is not to be diminished as a result of any action under the *Native Title (Queensland) Act 1993*. However, situations may exist where the existing lot is unsurveyed and full survey is required for the action involving native title rights and interests.

3.26 Natural boundaries

Standard under the SMI Act

See chapter 4 *Physical feature boundaries*, page 73.
See section 9.54 *Watersheds*, page 152.

If a natural feature is to be adopted as a new boundary:

- the feature must be surveyed by a method that accurately locates the feature; and
- an unambiguous description of the feature must be shown on the plan and survey records.

If a boundary abuts a non-tidal watercourse or lake (see the *Survey and Mapping Infrastructure Act 2003* for definitions), the location of the boundary must accord with the location criteria provisions in Part 7 of the Act.

If a boundary abuts tidal waters, the tidal boundary is defined in the Act and if surveyed or compiled the appropriate location must accord with the provisions in Part 7 of the Act. Also refer to Chapter 4 *Physical feature boundaries*.

3.27 New lot boundaries intersecting registered secondary interests

Standard under the SMI Act

See section 3.11 *Compiled plans and boundaries*, page 24.
See section 3.43.2 *Other unsurveyed boundaries*, page 71.
See section 9.8 *Calculated lines*, page 124.
See the *Land Title Practice Manual (Queensland)*, clause 9-2020.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.21 'New lot boundaries and secondary interests'.

The intersections of new lot boundaries (excluding building format lots) with registered secondary interests, whilst dimensioned on the survey plan, are not required to be marked on the ground. The dimensions along the new lot boundaries to the intersections of the secondary interests are calculated.

Existing registered secondary interests that are not intersected, although plotted at scale within the subject lots, are not required to be dimensioned.

3.28 Permanent survey marks and connection to datum

Information

See section 3.14 *Coordinates*, page 28.
See section 3.22 *Large scale land development surveys*, page 41.
See section 3.24 *Meridian*, page 48.
See chapter 8 *Surveys using Global Navigation Satellite Systems (GNSS)*, page 110.

The term 'connection to datum' refers to establishing a connection between a survey and the State control survey. The State control survey is the whole of the state geodetic adjustment, tied to the Asia-Pacific Reference Frame (APREF) through the Australian Regional GNSS Network (ARGN). The APREF provides the primary geodetic framework for the spatial data infrastructure in Queensland and the rest of Australia. The marks in this adjustment with a GDA lineage of "datum", including CORS, can be used to connect to the State control survey. Marks that have derived coordinates are not part of the datum.

Connecting a new survey to datum provides several key benefits:

1. It allows the survey to be consistently positioned and oriented within the GDA coordinate system.
2. It enables the precise coordinates and positional uncertainties of the new survey points to be determined relative to the established datum.
3. It ensures consistency and integration between the new survey and the existing spatial data infrastructure.
4. It facilitates the use of modern positioning techniques like GNSS to connect surveys to datum.

3.28.1 Connection to datum

Standard under the SMI Act

A cadastral surveyor must connect a survey to the State control survey[2] for all field surveys that:

- use GNSS (due to legal traceability), or
- create or identify 10 or more lots, or
- create or identify a lot or series of lots (including secondary interest parcels) where the distance spanning between any two new or reinstated corners on the subject land is more than 2 kilometres.

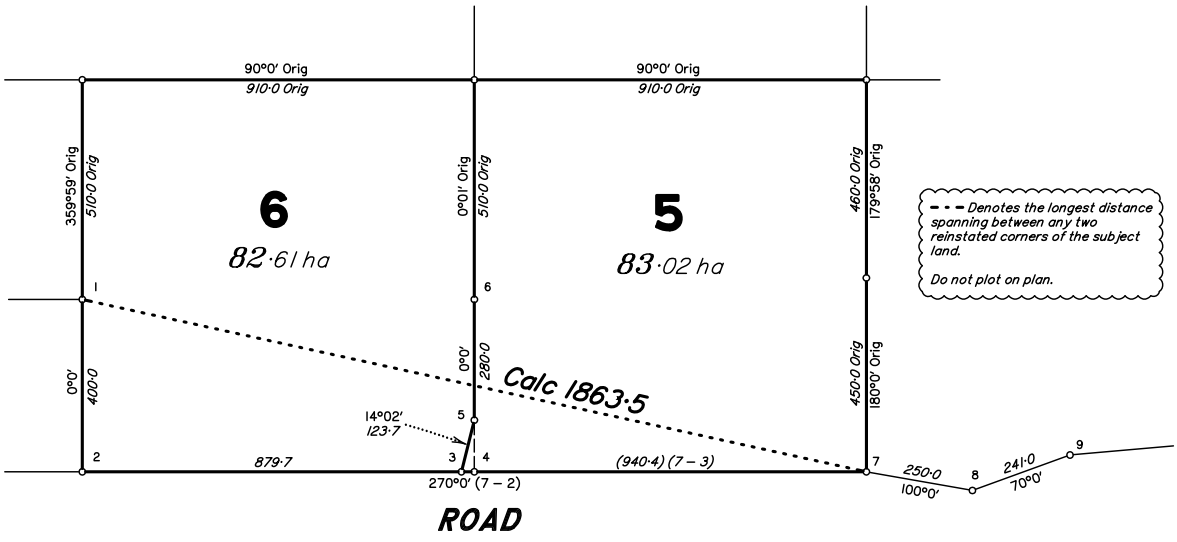


Figure 3-2 Example - connection to datum not required

This requirement includes identification surveys and surveys on standard and volumetric format plans but does not apply to surveys on building format plans or compiled plans, or surveys conducted under 3.38 *Surveys using remotely sensed data*.

Connection to the State control survey can be by way of:

- continuously operating reference stations (CORS) with lineage of datum (e.g. using Network RTK or AUSPOS), or
- connection to two (2) existing coordinated permanent survey marks with a lineage of datum each of which has a horizontal positional uncertainty of <30mm.

Coordinates must be determined on at least two marks within the survey that are of good geometry spanning the survey (i.e. marks near the extremities on the diagonally opposite ends of the survey). However, subject to that geometry, each existing permanent survey mark with datum lineage coordinates included in the survey removes the need to determine coordinates on a corresponding mark within the survey.

Where connections to datum are made using GNSS, two independent occupations are required for each mark for which coordinates are determined.

The quality of the connection to the State control survey must be able to provide a horizontal positional uncertainty of <50mm on any mark for which coordinates are determined (see section 3.14 *Coordinates*).

Where a previous survey over the subject land has been adequately connected to datum (i.e. connection from at least two marks that are of good geometry spanning the new survey), surveyors do not have to independently connect the survey to datum, provided the details of the underlying plan's connection to datum is stated in the survey report of the new plan. This exclusion does not apply to field surveys where any boundaries are surveyed using GNSS, because connection to datum is required for legal traceability of measurement purposes.

Surveys that are not required to connect to the State control survey, may still connect to existing or new permanent survey marks that are of good geometry spanning the survey. It is preferred that connections to existing permanent survey marks be made in lieu of placement of new PSMs, to support the integration of surveys.

Where GNSS observations are used to connect the survey to the State control survey, the measurement techniques referred to in Chapter 8 *Surveys using Global Navigation Satellite Systems (GNSS)* may be used.

Depending on the method of the connection to datum, it may be necessary to also show the connections to permanent survey marks as presented in Figure 9-6 and Figure 9-7 at the end of section 9.15 *Corner information*.

3.28.2 Specification for permanent survey marks

Standard under the SMI Act

Where permanent survey marks are installed, the type of marks are not limited to the traditional brass plaques set in concrete but may include a range of options. To facilitate this, the specifications for permanent survey marks have been revised using performance criteria rather than the previous prescriptive dimensional specification.

In order for a survey mark to be accepted as a permanent survey mark it must conform to the following criteria:

- The mark must be made of a durable material, preferably metal.
- When installed, the mark must be permanent and stable (i.e. have the expectation of longevity). Marks located in shallow structures, such as kerbing or footpaths where they will be disturbed or destroyed (e.g. by vehicles, soil movement or tree roots), do not satisfy this specification.
- It must be capable of being readily identifiable as a survey mark.
- It must be able to be identified with a unique survey control number (as per the Survey Control Register number) either on the mark itself or attached to the mark (e.g. on a concrete collar).
- The mark must be recorded in the State's Survey Control Register.
- It should be capable of safe occupation, preferably in a location suitable for measurement by GNSS.

Any new PSMs established must have a completed permanent survey mark plan (Form 6) forwarded to the

department, in accordance with the provisions of section 15(2) of the *Survey and Mapping Infrastructure Act 2003*. Where the Form 6 for an existing PSM is found to be deficient, information to rectify the Form 6 should be forwarded to the department so that the Form 6 can be amended and re-imaged. If there is no Form 6 in existence for an existing PSM, surveyors are encouraged to prepare and submit a Form 6.

The Form 6 template is available in digital format from the government's Business Queensland website.

3.28.3 Coordinates for marks on a survey

Guideline under Standard 3.28 Permanent survey marks and connection to datum

Where a survey is required to be connected to datum under section 3.28.1 *Connection to datum*, coordinates should be determined for marks on the survey itself (i.e. at or adjacent to the corners of the subject land). While it is permissible to determine coordinates for any type of mark, surveyors should consider the longer-term benefits to the cadastre of determining coordinates for marks with greater stability (e.g. buried marks or permanent marks).

3.29 Permits

Standard under the SMI Act

See section 3.17 *Description of parcels*, page 31.
See section 5.17 *State land actions*, page 97.
See section 9.4 *Administrative plans (APs)*, page 122.

Permits are dealt with under sections 60, 177 and 178 of the *Land Act 1994*.

A tenure document will issue for a permit. If the term of a permit is 12 months or more, the permit's tenure document will be recorded (registered) in the Automated Titles System (ATS). Because a permit to occupy is a secondary interest, the permit will be noted on the reserve title or USL title for the permit land (similar to the issue of a State lease over a reserve). No noting will be made on any other title if the registered permit is over 'undescribed' land: road, river, creek or land below tidal boundary.

All permits are secondary interests and hence all descriptions must refer to lot alpha descriptions and should be in the following format (Table 3-5).

Table 3-5 Permit descriptions

Section of *Land Act 1994*	Type of permit (over):	Description
60	Trust land	Lot alpha in lot-on-plan
177	Road	Lot alpha in road adjacent to lot-on-plan
177	Reserve	Lot alpha in lot-on-plan
177	USL with a lot-on-plan title reference	Lot alpha in lot-on-plan
178	Land beyond tidal boundary (river)	Lot alpha in Brisbane River adjacent to lot-on-plan
178	Land beyond tidal boundary (ocean)	Lot alpha in Coral Sea adjacent to lot-on-plan

3.30 Profit a prendre

Information

See section 3.14 *Coordinates*, page 28.
See section 3.18 *Dimensions*, page 33.
See chapter 8 *Surveys using Global Navigation Satellite Systems (GNSS)*, page 110.
See section 61J of the *Forestry Act 1959*.
See sections 373E–373Q of the *Land Act 1994*.
See sections 97E–97M of the *Land Title Act 1994*.

See Schedule 2 *Definitions*, of the *Land Title Act 1994*.
See the *Land Title Practice Manual (Queensland)*, Part 29.
See the *Registrar of Titles Directions for the Preparation of Plans*, Part 19, 'Profits a prendre'.

A profit a prendre is an interest that arises by agreement between two parties and relates to the right of one party to enter on the land of the other and extract or remove part of the land's substance. In simple terms, it is the right to take soil (e.g. sand, gravel) or produce (e.g. wood, turf, fish, etc.) from another's land or to graze animals on it.

A profit a prendre may be registered in the land registry against the title to the land. There is no obligation or statutory requirement that requires a profit a prendre to be registered in the land registry.

If a profit a prendre involves non-freehold land, under provisions of the *Land Act 1994*, the recording of a profit a prendre against a lease requires the consent of the Minister and is limited to trees and vegetation only.

On registration, a profit a prendre becomes a legal interest that may be sold, mortgaged, gifted, or passed to a beneficiary by a will or intestacy. It is an encumbrance on the title. If the encumbrance is not over the whole of a lot (or lots) and is to be registered in the land registry, a survey of the area to be subject to the profit a prendre must be registered in the land registry.

3.30.1 Options for survey

Standard under the SMI Act

The Registrar's directions require a profit a prendre to be fully dimensioned with an area and delineated on a survey plan capable of registration in the land registry. Three options are available for the survey plan for a profit a prendre:

- full cadastral survey
- reduced survey standard survey
- survey plan prepared by compilation.

3.30.1.1 Full cadastral survey

Full cadastral survey is a normal cadastral survey meeting all the requirements of the *Survey and Mapping Infrastructure Act 2003*.

3.30.1.2 Reduced survey standard

Survey of a profit a prendre may be undertaken using the reduced survey standard set out in this section.

Using this method, the boundaries of a profit a prendre are determined by visible and durable monuments and reference marks, located by a cadastral surveyor. The survey depicting the profit a prendre must be capable of unambiguous interpretation. While reduced standard surveys are not GNSS specific, it is envisaged that GNSS would normally be the accepted technology adopted to satisfy the requirements.

The following specifications apply:

- Where a corner of a profit a prendre lies on a boundary of the parent lot, a mark must be placed on that boundary to standards as specified in section 3.4.2 *Measurement accuracy*.
- Other corners of the profit a prendre may be located to a reduced accuracy that must be no less than ± 1 metre.
- Where coordinates are used to derive the dimensions (bearings and distances) of a profit a prendre, the requirements of section 3.14 *Coordinates* and chapter 8 *Surveys using Global Navigation Satellite Systems (GNSS)* still apply. However, where a reduced accuracy has been used under this standard, then the vector accuracy is also reduced for those corners, (i.e. vector accuracy of 1 metre relative uncertainty, expressed at the 95 percent confidence level in accordance with *ICSM Standard for the Australian Survey Control Network* (SP1 v2.2) <www.icsm.gov.au/standard-australian-survey-control-network-special-publication-1-sp1>). This enables the measurement technique referred to as *differential GNSS* to be used to locate those corners of the profit a prendre, in addition to the more precise measurement techniques setout in chapter 8 *Surveys using Global Navigation Satellite Systems (GNSS)*.

- Where the dimensions (bearings and distances) are derived from other than a normal cadastral survey or GNSS observations, the method of determination must be shown in the survey records.
- A statement as to the accuracy of the positioning of the corners of the profit a prendre is required in the form of:

  Boundaries of the Profit a Prendre have been determined using a reduced survey standard with an accuracy of +/– 1·0 metre.

- The requirement under section 3.18 *Dimensions* to have sufficient connections to reinstate the parcel (i.e. the profit a prendre) from the corners of the parent lot still applies.

3.30.1.3 Survey plan prepared by compilation

The survey plan prepared must satisfy section 18 of the Survey and Mapping Infrastructure Regulation 2024. About dimensions are not acceptable. Information used by a surveyor to determine the boundaries of a profit a prendre, and quoted in the Form 18 certification, must be searchable and may be:

- Existing land registry records (e.g. lodged / registered survey plans, survey records, lease sketches)
- Held by the department as survey plan archival information (e.g. deposited survey plans, redundant catalogue plans, identification survey plans, other survey records; cadastral connections)
- Available from the department (e.g. air photo library, digital topographic data, digital imagery; paper or digital maps or products)
- Other source information lodged with the plan as survey records and a report, if necessary.

3.31 Public use land

Standard under the SMI Act

See section 3.2.1 *Access to public use land*, page 11.
See section 6.4.1 *Easements over land shown as public use land*, page 101.
See the *Land Title Practice Manual (Queensland)*, clause 21-2270.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.8.2.1 'Public Use Land'.

Under the *Planning Act 2016* a local authority is unable to take public use land, for example as a condition of a development approval. There is also no provision in the *Planning Act 2016* for land required by a local authority to be dedicated as a reserve under the *Land Act 1994*.

Section 145 of the *Planning Act 2016* establishes arrangements for conditions about non-trunk infrastructure on development approvals. However, any such condition requiring the dedication of land for public parks infrastructure or local community facilities would also be subject to section 159. Consequently, there is no provision as part of a local authority development approval under the *Planning Act 2016* to require land, including for public parks infrastructure or local community facilities, to be dedicated as a reserve under the *Land Act 1994*.

This means that under the *Planning Act 2016*, land that is required by council for public community purposes must be taken in freehold on trust. However, land can be taken as public use land for coastal management under Part 6 of the *Coastal Protection and Management Act 1995*. All other land required by a local authority, including land required for drainage, must be taken as freehold.

Also, the Minister is still able to approve the creation of public use land under the *Land Act 1994* and the *Land Title Act 1994*. Sections 31, 290J, 290JA and 290K of the *Land Act 1994* and section 51 of the *Land Title Act 1994* refer to the dedication of public use land (e.g. reserves) on a plan of subdivision.

A plan of subdivision registered under the *Land Act 1994*, that identifies public use land for a purpose mentioned in section 31(1), for example a community purpose, must be approved by the Minister administering the Act.

A plan of subdivision registered under the *Land Title Act 1994*, that identifies public use land for a purpose mentioned in section 31(1) of the *Land Act 1994*, may be approved by the Minister administering that Act. Where approved by the Minister, the land is dedicated as a reserve for the purpose on registration of the plan.

For plans registered under either *Land Act 1994* or the *Land Title Act 1994* that are approved by the Minister, the approval (statement of intent) will need to be lodged with the plan. The statement of intent will identify the trustees of the new reserve.

All new roads and public use land lots must be clearly shown on the plan.

For plans with public use land with a purpose mentioned in the *Land Act 1994* section 31(1) (for example a community purpose defined in Schedule 1 of the *Land Act 1994)*, that are approved by the Minister, the purpose must be identified on the front of the plan and any additional sheets. For example:

- *ROAD (or New Road) The descriptors "Lane", "Pathway" and "Highway" are unacceptable.*
- *Lot number and "PUBLIC USE LAND" together with the appropriate purpose.*

Applications for approval to dedicate public use land subject to section 31(1) of the *Land Act 1994* must be referred to the department, via the senior land officer in the local departmental office. See the table at Appendix G for the relevant email address of each local departmental office.

3.31.1 Access to public use land

Standard under the Land Act

Plans creating public use land, either as parks or reserves, must provide for a legal means of access to these areas. Under section 290JB of the *Land Act 1994* and section 51A(b) of the *Land Title Act 1994*, land cannot be created as a reserve, or any other public use land that is not a road, unless dedicated access (road or public thoroughfare easement) is provided, except if the Minister approves otherwise. As any public use land shown on a plan is intended to be created as a reserve for some purpose, this access must be provided at the time the public use land is created.

Dedicated access is not required where the land is to be included in an existing reserve which itself has dedicated access. Note that this reserve must be a reserve for the same purposes and under the same trusteeship as is intended for the land being defined as public use land. Adjoining land held in fee simple by the local government as trustee and being used for the same purpose, such as a park, is not acceptable. However, the adjoining land can be public use land that is to be dedicated as reserve for the same purposes and under the same trusteeship as is intended for the land being defined as public use land.

For the above exceptions, the Minister must approve that the plan of subdivision may be registered without access to the lot being available. Application for the Minister's approval is by way of letter to the department stating the reason for the request (e.g. land to be joined with an existing reserve of same purpose and trusteeship) and stating through where access will be available. The Minister's approval will be in the form of Form 18, 'General consent'.

Where the public use land lot forms, or is intended to form, part of a continuous trail or promenade, often occurring as part of a staged development, access for the lot is to be dealt with according to its location within the staged releases. Where the public use land lot adjoins part of the continuous trail that already has dedicated access, Ministerial approval to create the public use land without access is required as outlined in item 1 above. Where the public use land does not adjoin part of the continuous trail that already has dedicated access, such as where the road access will not be available until a later stage of the development, a public thoroughfare easement should be created over the proposed road corridor, so that the easement is absorbed through the subsequent dedication of the road.

If there is any doubt as to what type of access is required, contact your local departmental office early in the development process.

3.32 Redrawn plans

Information

A plan that is not lodged in the land registry may be redrawn with identical content including any strikeouts using the same plan number. It is the surveyor's responsibility to ensure that plans with different plan numbers but with duplicate content are not circulated.

3.33 Reinstatement of boundaries

3.33.1 Cadastral Reinstatement Standard

Information

See section 3.20 *Encroachments and improvements on or near a boundary,* page 35.
See section 3.37 *Survey reports,* page 64.
See Appendix F *Reports,* page 191.

This standard provides general direction to surveyors as to the things that must be done to ensure that cadastral boundaries are reinstated in accordance with the relevant law (statute and common law) and the reinstatement is adequately recorded.

Standard under the SMI Act

In conducting a cadastral survey which reinstates existing cadastral boundaries (this does not apply to compiled plans), a surveyor must:

- obtain an adequate survey search.
- gather sufficient physical evidence to effect the reinstatement.
- assess the origin of each piece of evidence, its reliability and its relevance to boundary location, based on the hierarchy of reinstatement evidence.
- take account of the rights of all parties affected by the reinstatement.
- reinstate existing boundaries based on the assessment and legal precedence.
- place appropriate marks to ensure there is long-standing evidence of the corner and the survey.
- record all relevant occupation.
- document in working files the evidence that has been used to reinstate each line (and corner) (e.g. use of previous surveys, use of occupation, allocation of excess and shortage etc).
- provide a reinstatement report from the documented evidence explaining the rationale for the reinstatement adopted. Where there are significant differences in dimensions (e.g. greater than the measurement accuracy appropriate for the survey), the report must address the method of reinstatement for each affected station.
- advise the department of steps taken to resolve inconsistencies with other surveys under section 17 of the *Survey and Mapping Infrastructure Act 2003*.
- notify the owner of land who may be adversely affected by a reinstatement in accordance with section 20 of the Survey and Mapping Infrastructure Regulation 2024. For example, such situations may arise when a reinstated boundary reveals that the original survey marks for the boundary were not in the correct position. (See section 3.20 *Encroachments and improvements on or near a boundary*).

3.33.2 Cadastral Reinstatement Guideline

Guideline under Standard 3.33.1 Cadastral Reinstatement Standard

In conducting a cadastral survey which reinstates existing cadastral boundaries, a surveyor will usually undertake a number of activities and exercise a number of judgements in order to reinstate boundaries in accordance with section 3.33.1 *Cadastral Reinstatement Standard*.

Prior to gathering data in the field a surveyor will usually:

- ensure that the survey search obtained incorporates all relevant plans, including historical plans and title records;
- analyse the search to determine agreement, discrepancies or lack of correlation between previous plans;
- ensure that they understand the previous surveyor's reinstatement.

Gathering data in the field a surveyor will usually:

- thoroughly search for physical evidence that may exist (including looking for buried or concealed marks);
- consider and connect to sufficient monuments to reinstate each corner and prove that the adopted marks are reliable, with greater weight being given to older monuments.
- identify differences or lack of correlation in the evidence when compared with previous surveys.

In determining the reinstatement of a boundary a surveyor will usually:

- resolve differences or lack of correlation between evidence gathered.
- ensure the rights of all adjoining owners surrounding the survey and the rights of the subject land are legitimately preserved.
- give due regard to surrounding boundary monumentation and occupation in determining a reinstatement solution, particularly when considering the distribution of excess and shortage.
- not reinstate boundaries solely on the basis of dimensions, without considering the existence of physical evidence (for example: fixing the depth of parcels at a previously surveyed distance, or the direction of side boundaries of a parcel at a previously surveyed direction, without searching for original marks or occupation).
- ensure the expressed intention, accuracy and historical standards of the original survey are considered.
- have a solid basis for the solution adopted and reasons for rejecting other options, where reinstated boundaries shift away from occupation or patterns of occupation.

In documenting the reinstatement of a boundary a surveyor will usually:

- record any other matters or evidence that will enhance future reinstatement of the boundaries created or reinstated.
- document the findings, decisions and rationale for the adopted solution.

3.33.3 Hierarchy of reinstatement evidence

Guideline under Standard 3.33.1 Cadastral Reinstatement Standard

In making a survey to re-establish the boundaries of land, the first and over-riding aim is to arrive at the intention of the parties as expressed in the original documents establishing those boundaries.

The evidence of the parties themselves, when available, will sometimes, although not always, be accepted. If the intention by the actual parties is not available, or not admissible, their intentions must be arrived at by the study of documents to which they were party.

A plan may be such a document or may be incorporated by reference into such a document.

If the plan is a statement of measurements actually marked on the ground, then the markings become monuments, and evidence as to their nature and position is admissible.

However, the intention of the parties to the creation of the boundary is of paramount importance, and the courts have laid down rules establishing the relative importance of the sometimes conflicting, documentary and physical evidence on which the surveyor must base their survey, in order to arrive at what the intention was.

This set of rules and priorities is often referred to as the *hierarchy of reinstatement evidence*. It is a list of **best** evidence for establishing the intention of the parties at the time the boundaries were created. It becomes a hierarchy where two or more pieces of evidence for determining a corner or a boundary exist and the evidence is in conflict. A modern expression of the hierarchy of boundary evidence, taking into account recent case law and using terminology relevant to surveying in Queensland can be ranked as[6]:

[6] Campbell, G., 2013. *Boundaries and the Common Law, Graduate Seminar.* University of Southern Queensland. Oct 2013. p. 17 <Boundaries and the common law (usq.edu.au)>.

1. "The greatest weight must always be given to lines and corners marked on the ground and corroborated by other physical evidence.
2. Natural monuments shown on the plan.
3. Adjoiners – "a well-established line of an adjacent survey" in existence before the original grant.
4. Adjoiners created after the original grant.
5. Artificial monuments corroborated by documentary evidence.
6. Occupation evidence that is contemporaneous and consistent with the documentary evidence.
7. Bearings and distances. Bearings and distances of short lines[7] will over-ride bearings and distances of longer lines. Neither bearing nor distance is given overall preference.
8. Artificial monuments uncorroborated by documentary or physical evidence.
9. Area will in general be the least valued evidence, but may in some cases be the key to the problem.
10. Finally, but most important of all, any one of these rules may be of more (or less) weight in one case than another. The rules set out are for cases of conflict, they are general rules, to be used as a guide but not as a straightjacket."

3.34 Remote area surveys

Standard under the SMI Act

See section 3.14 *Coordinates*, page 28.
See section 3.28 *Permanent survey marks and connection to datum*, page 50.
See section 3.37 *Survey reports*, page 64.
See section 3.38 *Surveys using remotely sensed data*, page 66.
See section 3.43 *Unsurveyed and/or calculated boundaries*, page 70.
See chapter 8 *Surveys using Global Navigation Satellite Systems (GNSS)*, page 110.
See section 9.8 *Calculated lines*, page 124.

Methods for cadastral surveys where the land is remote and of low value, or surveys would otherwise be uneconomical or unnecessary.

3.34.1 Application

Alternative survey methods may be used for carrying out cadastral surveys of land where one or more of the following criteria apply:

- The cost of conventional survey methods is inappropriate in relation to the value of the subject land and adjoining land. The nature of the terrain and density of vegetation cover may also affect this cost.
- The general amenity of the area is underdeveloped, as may be indicated by the following:
  - value of infrastructure
  - value of capital investment
  - population density
  - tourist facilities.
- The subject land is remote from any appropriate commercial centre (i.e. access is difficult in relation to distance to be travelled or the length of travelling time required).
- There is no need for the boundaries of internal roads to be fully marked, taking into account the requirements of the client, the State and the community and recognising good survey practice.

Alternative survey methods must meet the specification for surveys of land in remote areas forming part of this standard.

A cadastral surveyor undertaking a survey using alternative methods must lodge with the survey plan a

[7] For example, connections to reference marks.

report providing details of:

- the reason why conventional survey methods are unsuitable
- how the criteria described above are satisfied
- the alternative survey method used.

3.34.2 Specification for surveys of land in remote areas

Corner points of the subject land must:

- be marked with durable monuments unless it is physically impracticable to do so
- be capable of ready identification by surveyors and landholders
- (If requested by Aboriginal or Torres Strait Islander communities involved, notice boards must be placed in close proximity to monuments to give notice of their purpose.)
- be capable of description on a plan
- have sufficient reference marks to facilitate future reinstatement.

Any previously surveyed corners of boundaries of the subject land must be reinstated and marked. Existing marks are to be renewed if necessary.

Surveys of small exclusions of land from the subject land must be carried out to conventional cadastral survey standards unless an application for exemption from survey in terms of section 40(2) of the *Land Act 1994* is granted (this section applies to deeds of grant in trust for Aborigines and Torres Strait Islanders).

Whilst corners of the lot are required to be marked, roads that are wholly internal to the lot and access easements are not. Internal roads and access easements must be surveyed to the following minimum standard:

- The positions of road or easement centre lines are surveyed at sufficient intervals and accuracy:
  - to ensure existing road formations are entirely contained within dedicated corridors
  - to facilitate calculation of one side of the road or easement boundaries.
- Selected corners on one side of the road or easement are marked by permanent survey marks at intervals generally no greater than 3 kilometres.
- Intersections of road or easement boundaries with cadastral boundaries and with other road boundaries are marked by durable monuments.

For an example see Figure 3-3 below.

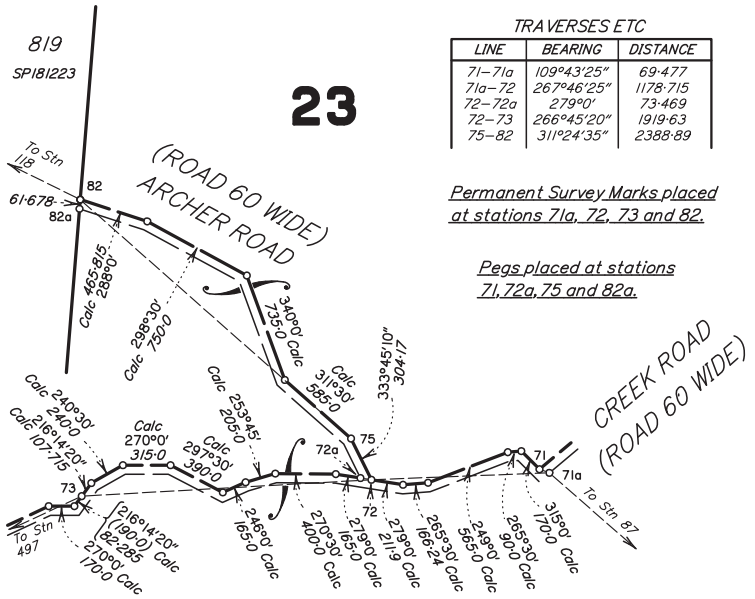


Figure 3-3 Example of internal roads in a remote area

The location of the durable monuments marking the corners of the subject land must described in some manner acceptable to interested landholders.

Bearings and distances of boundaries or coordinates of corners must be determined by appropriate means with the preferred means being survey using Global Navigation Satellite System (GNSS), normal cadastral survey, survey using remotely sensed data or a combination of these methods.

The requirement to connect to the State control survey still applies (refer to section 3.28 *Permanent survey marks and connection to datum*).

If the cadastral survey itself is done using GNSS techniques, the requirements of chapter 8 *Surveys using Global Navigation Satellite Systems (GNSS)* still apply.

The plan of survey must clearly describe the corners that have not been marked, and the source of any original information used in the survey such as maps and aerial photography.

3.35 Resumption actions

Information

See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.24 'Resumption Actions'.

Land may be resumed using the powers under an acquisition Act or by a negotiated purchase whereby the owner agrees to sign the subdivision plan. Where a purchase is effected by negotiation, the plan will comply with all requirements that apply when an owner subdivides land, creates an easement or opens new road, except that the plan is approved by the constructing authority rather than the planning body.

This section deals with the acquisition of land under the *Acquisition of Land Act 1967*, the *Land Act 1994* and other Acts authorising resumption of land including the *Electricity Act 1994*, the *State Development and Public Works Organisation Act 1971* and the *Transport Planning and Coordination Act 1994*.

Under these Acts, land is resumed in the following manner:

- Land granted in fee simple resumed by and vested in the State becomes USL, until dealt with under the *Land Act 1994* (section 12(1) of the *Acquisition of Land Act 1967*).
- Land granted in fee simple resumed by and vested in a constructing authority for an estate in fee simple, remains freehold land in the name of the constructing authority (section 12(2A) of the *Acquisition of Land Act 1967*).
- Land granted in fee simple resumed by and vested in a local government, remains freehold land in the name of the local government (section 12(2A) of the *Acquisition of Land Act 1967*).
- Land granted in fee simple in trust or a lease under the *Land Act 1994*, resumed under the *Acquisition of Land Act 1967*, becomes USL and may be dealt with under section 12(4A) of the *Acquisition of Land Act 1967*. If the land was resumed for road purposes the land may be dedicated as a road under the *Land Act 1994* or section 12B of the *Acquisition of Land Act 1967*.
- A lease or part of a lease resumed under the *Land Act 1994*, becomes USL until dealt with under the *Land Act 1994* (sections 219 and 225 *Land Act 1994*).
- Freehold land or leasehold land containing a reservation for a public purpose and stating the area of land reserved resumed under the *Land Act 1994*, becomes USL until dealt with under the *Land Act 1994* (section 230 of the *Land Act 1994*).

3.35.1 Notice of intention to resume

Standard under the SMI Act

Notices of intention to resume (NIR) requires notation where it is cancelled or satisfied by the plan or allocation to the lots that will continue to be subject to the NIR on any plan of survey that affects the subject land.

3.35.2 Notice of realignment

Standard under the Local Government Act

Under section 60 of the *Local Government Act 2009*, a local government may cause any road to be realigned in order to widen the road.

Section 61(6) of the Act states 'The local government must lodge a copy of a notice of intention to acquire land with the Registrar of Titles for registration on the instrument of title to the land'.

A search of the Automated Titles System (ATS) will reveal any notice of realignment.

When a local government does not proceed with a realignment, section 65 of the *Local Government Act 2009* provided for the removal of a notice of realignment.

Resumption of land to affect the realignment occurs under the *Acquisition of Land Act 1967*.

3.35.3 Resumptions for road purposes

Standard under the SMI Act

See section 10.2.1 *Creation of roads in freehold land*, page 154.
See section 10.2.2 *Creation of roads in leases, reserves, trust land,* page 155.
See section 10.2.3 *Creation of roads in State forest or timber reserves*, page 155.

Land may be resumed for road purposes by the State, a local government or a constructing authority (such as the chief executive under the *Transport Planning and Coordination Act 1994*).

Unless the whole of a lot is taken, the land that is taken by resumption must be shown as a lot on a survey plan prepared for the resumption. Regardless of the resumption notice being gazetted, no action is taken to correct the affected title for the land until the lodgement of the resumption dealings in the Titles Registry. The resumption dealings (resumption document(s) and the survey plan) are required to record the resumption in the register and a further document (described below) is required to dedicate the resumed parcel as road.

The resumed land is dedicated as road in the following manner:

- All land (excluding State lease over reserve) resumed by and vested in the State, which becomes USL on resumption, is dedicated as road by lodgement of a dedication notice under section 94 of the *Land Act 1994*.
- Leasehold land resumed by and vested in a constructing authority, which continues to be leasehold tenure on resumption, is dedicated as road by lodgement of a surrender notice (to surrender the acquired leasehold land) and a dedication notice under section 94 of the *Land Act 1994*.
- Where the leasehold land is a State lease over reserve and it is resumed by and vested in either the State or a constructing authority, the underlying reserve is not affected by the resumption. The underlying reserve must be revoked before the land can be dedicated as road (land is not resumed from a reserve, but rather is revoked under section 33 of the *Land Act 1994)*.

  State lease over reserve resumed under a resumption Act is dedicated as road by lodgement of a surrender notice (to surrender the acquired leasehold land) and a plan of subdivision identifying the area of road to be revoked from the underlying reserve (the plan must show the balance of the reserve and the new road). The plan must be accompanied by a statement of intent revoking part of the reserve and dedicating it as road.

  However, a surrender notice is not required where all or part of a State lease over reserve is resumed under the *Land Act 1994* (the resumption extinguishes the affected lease or part).

  Where the resumption affects only part of a State lease over reserve, a separate survey plan, identifying the land to be resumed from the State lease (lots described by alpha descriptions), is lodged as part of the resumption dealings to affect the resumption.
- Freehold land resumed by and vested in a local government or a constructing authority for an estate in fee simple can be dedicated as road by either of two methods:
  - by lodging a dedication notice under section 12B of the *Acquisition of Land Act 1967*

- by lodging an additional plan of new road cancelling the lot. (See section 10.2.1 *Creation of roads in freehold land*). The local authority is not required to approve the plan, as in this case it is exempt from approval pursuant to the *Planning Act 2016* and the Planning Regulation 2017, and, as such, the plan requires a notation on the back of the plan indicating this. The notation should be in the following form:

  This plan is for a purpose set out in the Schedule of the Acquisition of Land Act 1967 and is exempt from Local Government approval under schedules 18 and 24 of the Planning Regulation 2017.

Where constructing authorities undertake resumption actions for road purposes, the plan must identify the constructing authority file reference in the departmental file reference item on the plan administration sheet (Form 21B).

3.35.4 Resumption for transport corridor purposes

Standard under the SMI Act

See section 3.40 *Transport Infrastructure Act 1994*, page 67.

Under the *Transport Planning and Coordination Act 1994*, land can be resumed for transport purposes. Transport purposes is defined under the Act as including 'any purpose for which the Minister is responsible' and also incidental purposes such as facilitating the construction of ancillary works and plant, the amelioration of negative environmental impacts or providing facilities for transport users. Transport purposes specifically named in the Act are State toll road, local government tollway, rail transport, busway and light rail.

The chief executive of the department responsible for the administration of the transport purpose for which the land is being resumed is a constructing authority within the meaning of the *Acquisition of Land Act 1967*. Land resumed for transport purposes (other than road) and vested in the chief executive as constructing authority remains as freehold or leasehold land until it is ready to be dealt with under the *Transport Infrastructure Act 1994*.

The land that is taken by resumption must be shown as a lot, or easement if applicable, on the survey plan. A resumption document is required for recording the resumption in the register. If the resumed land is to become part of a transport corridor, a further action is then required to make the land transport corridor land.

The land can be declared as corridor land for a specific transport purpose. On declaration, the resumed land becomes USL and the land is then created as or added to a lease to the State in perpetuity for the declared transport purpose under section 17 of the *Land Act 1994*. Transport corridor land is then subleased to transport corridor operators who operate the specific toll road, tollway, railway, busway or light rail.

Where constructing authorities undertake resumption actions for transport corridor purposes, the plan must identify the constructing authority file reference in the departmental file reference item on the plan administration sheet (Form 21B).

3.35.5 Resumptions for other purposes

Information

The *Acquisition of Land Act 1967* enables land to be resumed for any purpose described in the schedule to the Act. If land is resumed for one of these purposes (other than road) and the purpose is also a community purpose under the *Land Act 1994*, then the land (if unallocated State land) is dedicated as a reserve for community purposes by lodgement of a dedication notice under section 31 of the *Land Act 1994*. If the land is resumed for any other purpose that is not a community purpose under the *Land Act 1994*, then the land (if unallocated State land) is granted to the constructing authority by deed or by way of lease.

3.35.6 Freehold land

Standard under the SMI Act

Plans using the provisions of the *Acquisition of Land Act 1967*:

- must deal only with the action being implemented by the resumption

- must show all resumed areas as lots or easements, as appropriate
- cannot dedicate new road
- are registered under the provisions of the *Land Title Act 1994*
- must be signed by the resuming authority as constructing authority
- do not require local government consent.

All registered interests affecting land being resumed (but not including resumption for easement purposes only) are automatically cancelled by section 12(5) of the *Acquisition of Land Act 1967*, and must not be shown on the plan in the lot to be resumed. However, allocations are required to be shown on sheet 2 of the plan.

The purposes for which land may be taken and by whom are set out in section 5 of the *Acquisition of Land Act 1967*. Land acquired under the *Acquisition of Land Act 1967* may be taken for multiple purposes. Also refer to section 12(4) of the *Acquisition of Land Act 1967*.

Where a subdivision of a balance parcel is required, e.g. as part of a compensation agreement, the subdivision plan must follow the resumption plan. The subdivision plan is subject to the same requirements as any other plan of subdivision.

3.35.7 Resumptions from non-freehold land

Standard under the SMI Act

See section 6.5.1 *Easements over reserves and unallocated State land*, page 102.
See section 9.2 *Action statements*, page 119.
See Chapter 5, Part 3, Division 1 of the *Land Act 1994*, *Resumption of a lease or easement*.

The resumed land must be shown in a form that is consistent with the purpose for which the interest in the land is being resumed (i.e. lot or easement). Refer to section 216(2) of the *Land Act 1994*.

The plan of subdivision lodged to affect a resumption must be consented to by the chief executive of the constructing authority as the acquiring entity.

Land is not resumed from certain State land (e.g. transferable land under the *Aboriginal Land Act 1991*, reserves, road). In these cases, where the intended action is to open road, the plan will be prepared as a normal road opening in State land, with an appropriate action statement. Alternatively, the requirement could be to subdivide the land to create a separate lot, with further action to deal with the lot to follow.

Under the provisions of the *Acquisition of Land Act 1967* an interest may be resumed from a lease under section 216 of the *Land Act 1994*, section 125A of the *State Development and Public Works Organisation Act 1971* or section 25 of the *Transport Planning and Coordination Act 1994*. Land resumed from a lease under the *Land Act 1994* becomes USL, while land resumed under other legislation remains as a lease.

3.35.7.1 Resumption of possession of reservation in title

Standard under the SMI Act

See section 2.9 *Reservations in title*, page 6.

Under section 229 of the *Land Act 1994* an area reserved for a public purpose (or part thereof) within a lease, deed or DOGIT may be resumed. In accordance with section 26(1) of the *Land Act 1994*, if all or part of a public purpose reservation is resumed and the boundaries of the reservation are not stated in the title to the land (i.e. a floating reservation), the Minister may decide the boundaries of the reservation. In this regard, the plan of resumption must identify the area resumed as a lot and an allocation certificate must allocate the area of public purpose reservation resumed to the lot. If only part of the public purpose reservation area is resumed, the balance area of the public purpose reservation must be allocated to the balance title.

Signature of the allocation certificate by the Minister's delegate is required and will be accepted as the Minister's decision in terms of section 26(1).

If the land is intended for road purposes or a community purpose under the *Land Act 1994*, the plan of

resumption must identify the area resumed as a lot and a dedication notice must be lodged with the plan.

3.36 Resurveys

Standard under the SMI Act

See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.9.1 'Resurveys'

A resurvey is a plan of subdivision under section 49 of the *Land Title Act 1994* and section 290E of the *Land Act 1994.*

A resurvey is usually carried out with the view to correcting the dimensions of a parcel of land.

On registration, the description of the land changes to the new lot on plan shown on the plan of resurvey and a new title, deed, lease or deed of grant in trust will issue.

The title of the plan is to be shown as:

Lot # being a Resurvey of Lot # on RP######

Cancelling Lot # on RP######

It is preferable to use the original lot description as the new lot number.

Resurveys do not require local government consent.

There can be more than one resurvey on the one plan or a resurvey and a secondary interest etc.

For **State land** where the lot has not been previously surveyed, the plan should **not** be presented as a plan of resurvey of the lot, but rather a plan of the lot. For a resurvey of a freeholding lease, term lease (other than a State lease) or a perpetual lease, the plan must be accompanied by a statement of intent.

If a lot is the subject of a conditional consent, the plan of resurvey should make reference to the conditional consent on the original plan on the administration sheet of the plan of resurvey. If local government approval for the removal of the conditional consent has been obtained, the removal/waiver letter must be lodged with the plan (see section 5.15.1 *Consent shown on plan only*).

All plans of resurvey, whether surveyed or compiled, must include a survey report.

3.37 Survey reports

Standard under the SMI Act

See section 1.7 *Exemptions - Departure from standards*, page 2.
See section 3.6.2 *Balance areas*, page 15.
See section 3.11 *Compiled plans and boundaries*, page 24.
See section 3.23.1 *Boundary marking*, page 42.
See section 3.33.1 *Cadastral Reinstatement Standard*, page 56.
See section 3.34.1 *Application*, page 58.
See section 3.36 *Resurveys*, page 64.
See section 4.2.1 *Plan notations*, page 77.
See section 4.5.1 *Plans of survey*, page 82.
See section 9.15.3.1 *Original reference marks*, page 129.

A survey report provides details pertinent to the survey that is either required by certain standards (such as a reinstatement report under section 3.33.1 *Cadastral Reinstatement Standard* or a water boundary report under section 4.5.1 *Plans of survey*), or is necessary to convey information that is not evident from the plan face.

A survey report is to be included on the plan or submitted as survey records to accompany the plan.

A survey report must contain:

- exemptions from survey standards and the specific elements of the survey to which each exemption applies (section 1.7)

- the reinstatement report, unless the plan is compiled (section 3.33.1)
- the water boundary report if the survey includes a surveyed or compiled water boundary, including the provisions of the SMI Act used to define the water boundary (sections 4.5.1 and 4.5.2)
- additional details required for a remote area survey (section 3.34.1)
- explanations for any corners that were not able to be marked (section 3.23.1)
- explanations for any re-referenced marks not explained on the face of the plan (section 9.15.3.1)
- explanations for any items marked as "Noted and Checked" or "N & C" not made clear on the face of the plan (section 9.15.3.1)
- where adjoining new lots each have a balance area following a boundary re-alignment, the area of the severance used to calculate the balance areas is to be noted (section 3.6.2).

A survey report may also contain other relevant information such as:

- relevant plans/documents obtained as search material (section 3.33.2)
- field data, including traverses
- boundary or data analysis
- explanation of complex survey purposes, particularly for State land dealings
- explanation of complex tenure history
- survey techniques or methodology adopted, particularly for GNSS
- clarifying source information used as survey data i.e. imagery, lidar, etc
- clarifying datum connections or datum issues
- explanation of encroachments or notifications
- a description of decisions made for a compiled plan, such as resolving meridian sourced from multiple plans, or the dimensions adopted for compilation, etc.

3.37.1 Survey records

Standard under the SMI Act

See section 3.11 *Compiled plans and boundaries*, page 24.
See section 3.33.1 *Cadastral Reinstatement Standard*, page 56.
See departmental procedure *Submitting survey information under the Survey and Mapping Infrastructure Act 2003 SIG/2021/5860*,
<www.resources.qld.gov.au/?a=109113:policy_registry/submitting-survey-plans-under-smia.pdf>.

Survey records may be lodged where information that is required cannot be conveniently shown on a sheet of the plan. This may include imagery or information which is not publicly searchable in the department or land registry. Survey records for lodgement with the department must be clearly identified as survey records and must include a completed Form 12 certificate in accordance with section 22(2) of the Survey and Mapping Infrastructure Regulation 2024. For plans lodged only with Titles Queensland, survey records must be submitted separately to the department along with a copy of the plan. The method for submission of information is to be in accordance with departmental policy *Submitting survey information under the Survey and Mapping Infrastructure Act 2003 SIG/2021/5860*.

Sufficient survey records must be submitted with the plan of survey to ensure that a complete record of the survey is available to the department. The survey records need not be in the traditional field note form but should be no larger than A4. Survey records must have a cover or cover sheet that contains the following information:

- a description of the survey (in most cases the lots numbers being created)
- a description of the lots being cancelled
- the locality and local government names
- the surveyor's name

- the plan number to which they refer.

Where survey records, or survey reports are submitted as a paper copy, the cover or cover sheet should be of heavier-grade paper than the other pages. If a report is to accompany survey records, the report and survey records must be the same size and be securely bound together.

Where a surveyor uses methods and/or equipment that involve a significant departure from conventional survey practice, in order to demonstrate that such method and/or equipment is capable of achieving the survey standard, the surveyor must submit with the survey records sufficient information to identify the methods and/or equipment used.

When additional data is lodged in support of the survey (e.g. creek traverse offsets), this information must be indicated in the appropriate box on the front of the plan:

Survey Records: YES / NO

When the plan of survey refers to a set of survey records for a different plan, the box should be completed referring to that plan:

Survey Records: YES / Under SP######

3.38 Surveys using remotely sensed data

Standard under the SMI Act

See section 3.34 *Remote area surveys*, page 58.
See chapter 4 *Physical feature boundaries*, page 73.

It is acceptable to use remotely sensed data for particular cadastral surveys, dependent on the purpose of the survey. Surveys using remotely sensed data may be acceptable where the boundary can be clearly identified on the ground and on the photograph, imagery or digital model, eliminating the need for marking. This means that the boundary may follow an existing structure (e.g. fence) or a physical feature such as a ridge or watercourse.

In many cases suitable photography, imagery or a digital terrain model may already be available from the department or non-government organisations.

- If the source is imagery or data held by the department (e.g. in the State remotely sensed image library held under the *Survey and Mapping Infrastructure Act 2003*), sufficient information must be provided on the plan or in the survey records to identify the specific image or model used. Further information must also identify the structure or feature adopted in the image or model.
- If the source is imagery or data that is not held by the department, in addition to the above requirements, data including relevant metadata must be provided with the survey records in a form that would enable a surveyor to compile the location of the structure or feature from the data provided.

The following further requirements apply to surveys using remotely sensed data:

- The photography, imagery or digital model must be transformed or rectified to integrate with the adjoining cadastral surveys.
- The appropriate method used to establish the relationship between the imagery or digital model and the cadastral survey, must be documented in the survey records submitted with the plan.
- The resulting bearings and distances must be of an accuracy corresponding to the resolution of the remotely sensed data.
- Measurement and computation from the remotely sensed data must be undertaken by a suitably qualified person.

3.39 Town reserves and pasturage reserves

Standard under the SMI Act

See section 5.17 *State land actions*, page 97.
See section 9.2 *Action statements*, page 119.
See the *Registrar of Titles directions for the preparation of plans*, Direction 4.17 'Undescribed

balances'.

For **all** actions involving the allocation or dedication of part of an area of a town reserve or pasturage reserve, a plan of the respective lot and the balance of the reserve showing its amended area must be prepared as part of the dealing and recorded against the reserve title.

The survey standard of the new lot and the balance lot must not be any lesser than the standard that applies to the reserve that is being dealt with. That is, if the action involves reserve that is fully surveyed, both the new lot and the balance lot must be fully surveyed, to maintain the fully surveyed status of the parcel.

For those reserves that are not described by a current survey plan, the department will progressively prepare a survey plan of each reserve as it currently exists taking into account all the areas that have been excised out over the years. Once this new plan has been prepared and an area of the reserve calculated, a requirement for all future dealings involving excisions from the reserve will be the preparation of a balance plan of the reserve. The surveyor who is undertaking the excision survey will be able to obtain a copy of the digital file for the reserve in order to prepare the balance plan. If a current survey plan adequately describing the reserve is not available, prior approval of the Registrar of Titles must be sought for the undescribed balance. The Registrar of Titles may approve that a plan of the balance of the lot is not required for certain actions. In some instances, the balance lot will be required to be fully described.

3.40 *Transport Infrastructure Act 1994*

Information

The objective of the *Transport Infrastructure Act 1994*, in association with the *Transport Planning and Coordination Act 1994*, is to achieve overall transport effectiveness and efficiency through strategic planning and management of transport resources. Land tenure management of transport land under these Acts is effected through declared transport corridors for specific transport purposes—State toll road, local government tollway, rail transport, busway and light rail. Corridor land is held by the State under perpetual leases for a gazetted transport purpose with subleases to transport corridor operators. Sections 157, 183, 204, 211 and 336(2)(a) of the *Land Act 1994* do not apply to a lease or sublease of transport corridor land.

A transport perpetual lease may cover a large number of lots (see rail transport corridor perpetual lease no. 208003). The Registrar of Titles may decide it is more appropriate for separate transport infrastructure titles to be created for particular corridors or for particular regions (e.g. transport infrastructure title no. 48000011 was created for rail transport corridor land in the Shire of Carpentaria). The purpose of transport corridor land may change in response to government or community requirements.

Ministerial consent is not required for a plan of subdivision that subdivides or amalgamates land subject to a transport perpetual lease (i.e. transport corridor land) or excludes land from a transport corridor lease due to a declaration under the *Transport Infrastructure Act 1994*. However, ministerial consent is required if the transport corridor land is being amalgamated with adjoining land, dedicated as public use land (including road) or surrendered from a transport perpetual lease. Land surrendered from a transport perpetual lease becomes USL.

Land may be included into and surrendered from a transport perpetual lease. Land may also be included into and surrendered from a sublease of a transport perpetual lease. Ministerial approval is not needed for an amendment of a sublease. Consequently, the descriptions of transport perpetual leases and subleases held by the relevant transport corridor operator may be continually amended. Any amendment to the description of the transport perpetual lease is accompanied by an amendment to the description of the sublease to the transport corridor operator. Land subject to a sublease to a transport corridor operator cannot be defined by part of a lot.

All transport corridor land, except for rail corridor land, needs to be declared under the *Transport Infrastructure Act 1994*. The survey requirements for State toll road, local government tollway, busway and light rail corridors are the same as for the rail corridor.

3.40.1 Queensland Transport rail corridor lease and sublease

Information

Over a number of years the rail network within Queensland (formerly owned and operated by Queensland Rail) has undergone a tenure change.

In general terms, the rail network has been fully identified and leased in perpetuity to The State of Queensland (represented by the Department of Transport)[8]. The lease reference is perpetual lease no. 208003 (title reference 40008706).

The major part of perpetual lease no. 208003 was then subleased to Queensland Rail, being a body corporate established pursuant to the *Government Owned Corporations Act 1993*. The sublease reference is sublease no. 701720343.

Survey plans, consisting of both fully surveyed and compiled (unsurveyed), exist for the whole of the perpetual lease and the sublease.

Because the land is subject to the provisions of the *Land Act 1994* and the *Transport Infrastructure Act 1994*, plan requirements are different to those of a lease issued under the *Land Act 1994* alone.

3.40.2 Amendments of Queensland Transport rail corridor lease and sublease

Standard under the Transport Infrastructure Act

As the rail network forms part of the State's transport corridor land, it will be necessary to adjust parts of the perpetual lease and the sublease.

For example:

- Queensland Rail may surrender its interest in part of the sublease and the part surrendered may then be subleased to another railway manager.
- Queensland Rail may surrender its interest in part of the sublease and Queensland Transport may then surrender that part of the land to the State in order that it may be opened as road.
- road may be closed and included into the perpetual lease and then added to a railway manager's sublease.

Section 336(2)(a) of the *Land Act 1994* states that a document of amendment may not increase or decrease the area subleased but section 262 of the *Transport Infrastructure Act 1994* states that rule does not apply to a lease of existing rail corridor land, new rail corridor land or non-rail corridor land (perpetual lease no. 208003 covers existing rail corridor land, new rail corridor land and non-rail corridor land).

By provision of section 262 above, the area of a railway managers sublease may be increased or decreased by a document of amendment.

In consequence, normal procedures relevant to plan preparation and presentation to adjust a lease under the *Land Act 1994* do not apply.

Land subleased to a railway manager must cover the whole of a lot.

3.40.2.1 Excisions from or subdivision of Queensland Transport rail corridor lease and sublease

Standard under the SMI Act

The whole of the rail corridor lot being affected must be dealt with. The area to be excised or subdivided is required to be shown as new road and a new lot for the balance must be created. Supporting documents will be lodged with the plan to amend the description of the corridor lot and to dedicate the new road.

Alternatively, the area required as new road could be shown as a new lot with a following action to dedicate that land as new road. The use of statements such as 'area to be excised, 1-2-3-1 10 m^2' is unacceptable. Freehold and leasehold land cannot be dealt with on the same plan.

3.40.2.2 Additions to Queensland Transport rail corridor lease and sublease

Standard under the SMI Act

Additions to the perpetual lease, or to a railway manager's sublease, are required to be described as either a

[8] The Department of Transport is now the Department of Transport and Main Roads.

separate lot on plan or amalgamated with the adjoining corridor lot, in accordance with the letter of offer.

3.40.3 Common areas for Queensland Transport over rail corridor land

Standard under the SMI Act

See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.9.2.1 'Common area in rail corridor land', and Direction 4.9.2.2 'Common area adjacent to rail corridor land'.

The *Transport Infrastructure Act 1994* (sections 26, 84B, 85A, 105I, 249 and 303A) enables 'common area' to be declared where certain road corridors (State-controlled road, State toll road, franchised road and local government tollway) cross railway and busway. Sections 253 and 358 of the *Transport Infrastructure Act 1994* allow the Minister to give permission for a local government to construct, maintain and operate a road on rail and light rail corridor land. A permission given under these sections is dealt with in the same manner as common areas.

3.40.3.1 Common area in rail corridor land

Section 24 of the *Transport Infrastructure Act 1994* allows the Minister to declare a State-controlled road. Section 26 empowers the Minister to declare a road or route, or part of a road or route, that is declared a State-controlled road, that crosses rail corridor land and continues on the other side of the rail corridor land to be a State-controlled road.

If the Minister decides to declare the road or route, or part of the road or route, to be a State-controlled road, the Minister must, when making the declaration, declare in the gazette notice the part of the rail corridor land where it is crossed by the road or route to be a 'common area' for the rail corridor land and the State-controlled road.

The 'common area' to be declared is required to be described on a survey plan as a secondary interest. That is, the title of the plan will be:

> *Lot <alpha> in Lot <number> on Plan <number>*.

The surveyed status of the common area will be the same as the affected lot. However, where the common area intersects any boundary of the affected lot, which is in a surveyed state, then that common area boundary must also be fully surveyed. This applies even if the whole of the affected lot is not in a fully surveyed status.

The Registrar of Titles must record the declarations on the relevant lease of the rail corridor land to the State and any affected sublease in the leasehold land register (section 26(7)(b) of the *Transport Infrastructure Act 1994*).

3.40.3.2 Common area in road adjacent to rail corridor land

Section 249 of the *Transport Infrastructure Act 1994* allows the Minister to declare part of a road as common area.

The 'common area' to be declared must be described on a survey plan as a secondary interest. The title of the plan will be:

> *Lot <alpha> in road adjacent to <Lot-on-plan>.*

A notation is required on the plan administration sheet to assist in the registration process. The notation required is:

> *Lot <Alpha> is proposed to be declared as a Common Area under Section 249 of the Transport Infrastructure Act 1994.*

The surveyed status of the common area must be the same as the adjoining lots. However, where the common area intersects any boundary, which is in a surveyed state, that common area boundary must also be fully surveyed. This applies even if the whole of the adjoining lots are not fully surveyed.

3.41 Unallocated State land (USL)

Information

See section 3.10 *Changing deeds of grant, reserves, leases and trust land*, page 20.
See section 5.17 *State land actions*, page 97.
See section 9.2 *Action statements*, page 119.

As of 2 October 2006, all unallocated State land (USL) other than roads, watercourses and land beyond a tidal boundary was allocated a lot-on-plan description and recorded in the Automated Titles System (ATS) with a USL title.

Standard under the SMI Act

For **all** actions involving the allocation or dedication of part of an area of USL that currently has a lot-on-plan description, a plan of the respective lot and the balance of the USL showing its amended area must be prepared as part of the dealing and recorded against the USL title.

The survey status of the new lot and the balance lot must not be any lesser than the status of the USL that is being dealt with. That is, if the action involves USL that is fully surveyed, both the new lot and the balance lot must be fully surveyed, to maintain the fully surveyed status of the parcel.

- If the action involves USL that is a lot on a survey plan, it must be actioned by a survey plan.
- If the action involves USL that is a lot on an Administrative plan, it may be actioned by an Administrative plan or a survey plan. However, if the respective lot or balance lot is to be granted in fee simple, leased, dedicated as reserve or dedicated as road adjoining a surveyed parcel, then it must be actioned by a survey plan. An exception to this is when the dimensions of the USL are not readily identifiable, in which case it may be actioned by an Administrative plan with the new lot then being cancelled by a survey plan.

3.42 Undescribed balances

Standard under the SMI Act

See section 3.8 *Cancelling clause*, page 19.
See section 11.11 *Paper subdivisions*, page 164.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.17 'Undescribed balances'.

Any plan which cancels an undescribed balance of a freehold title requires local government consent since it is a subdivision under the provisions of section 50 of the *Land Title Act 1994*. The description will be:

Lot # cancelling balance of Lot # on RP#######

3.43 Unsurveyed and/or calculated boundaries

Standard under the SMI Act

See section 3.11.2 *Subdivision by compiled plan*, page 25.
See section 9.8 *Calculated lines*, page 124.
See section 11.11 *Paper subdivisions*, page 164.

There are a number of tenures under the *Land Act 1994* that do not need to be in a fully surveyed state. In general, the boundaries of a freehold parcel must be fully surveyed. However, unsurveyed and calculated boundaries may be used as lot boundaries in the following circumstances.

3.43.1 Opposite side of road unsurveyed

See section 3.11.2 *Subdivision by compiled plan*, page 25.

Where a road boundary is surveyed on one side only, but all the secant points on the unsurveyed side have previously been marked, the unsurveyed side may be used as a boundary. The dimensions on the unsurveyed side must be shown as calculated ('Calc') if they have not been shown on a previous plan, or as original ('Orig') if they have been shown on a previous plan. In each case, the boundaries must be shown as full lines.

3.43.2 Other unsurveyed boundaries

See section 3.27 *New lot boundaries intersecting registered secondary interests*, page 49.
See section 9.8 *Calculated lines*, page 124.

Small sections of a boundary that can be calculated from other plans may be accepted in isolated areas. The unsurveyed part of the boundary is shown as a broken line, with a statement on the plan advising that specified lines on the plan have not been surveyed and that future actions (dealings) may require that these unsurveyed boundaries be fully surveyed. For example:

> *Lines 1–4 have not been fully surveyed and future dealings may require these boundaries to be surveyed.*

Where lengthy sections of boundaries have never been surveyed (boundaries not marked or cleared)—for example, in extremely rough and broken terrain—they may be accepted on subsequent plans. The dimensions may be compiled from the original plan of the land, and a balance area determined. In cases of doubt, the local departmental principal surveyor should be contacted for advice.

Where a new secondary interest is to be created within the footprint of an existing secondary interest, and the corners have previously been marked, it is acceptable to calculate new boundaries between existing marked corners. Those calculated boundaries are treated as described in section 9.8 *Calculated lines*.

3.44 Vincula

Standard under the SMI Act

See section 3.6.4 *Multiple line areas*, page 15.
See section 3.6.5 *Severances and part lots*, page 17.
See section 3.13 *Connection of surveys and detached lots*, page 28.
See section 3.18 *Dimensions*, page 33.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 8.4.2, 'Severed lots joined by vincula'.

Vincula may be used to bind severances of the same lot where the land is severed by:

- a watercourse
- a road
- a railway
- a stock route
- a channel/drain
- a reserve
- any other transport infrastructure corridor
- any combination of the above features.

A vinculum cannot be used to bind together land that is severed by lot(s) that do not form part of a transport infrastructure corridor.

Note: It is not permissible to mix vincula and part lots for the one lot.

Where vincula are utilised:

- the severances being bound must be adjacent across the dividing feature, for at least part of their frontages to the feature
- the area of the lot may be calculated from the sum of the areas of the individual severances, or be obtained by calculating the total area enclosed within the outer boundaries and subtracting the area of any enclosed feature. In either case, only the net area is shown and calculated to four significant figures. A three (or more) line area is not to be shown, unless there are section 23 of the *Land Act 1994* exclusions.

Where one or more of the severances of a new lot is fully or partly surveyed along the dividing feature on

the plan creating that lot, the relationship of those severances of the lot to each other severance must be clearly shown by surveyed connections.

Where one or more of the severances is compiled along the dividing feature, it is preferred, but not necessary, to show surveyed connections; however, the severances must be adequately connected by at least one dimensioned connection. Calculated connections derived from relationships shown on previous maps or plans, or from other information acceptable to the department may be shown. About connections are acceptable for non-freehold parcels. However, the connection shown must be of the same survey status as the parts being connected. The meridian used must be common to all parts of the lot.

3.45 Part lots

Standard under the SMI Act

See section 3.6.4 *Multiple line areas*, page 15.
See section 3.6.5 *Severances and part lots*, page 17.
See section 3.13 *Connection of surveys and detached lots*, page 28.
See section 3.18 *Dimensions*, page 33.

A standard format lot can be created in parts where the parts are separated by a dividing feature or lot (e.g. road, railway or watercourse, etc.) and can be effectively used as a single lot. See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 8.4 'Part lots'. A lot created in parts may be defined as either part lots, or in certain circumstances by using vincula (see section 3.44 *Vincula*).

Note: It is not permissible to mix vincula and part lots for the one lot.

For freehold parcels, the relationship between the part lots must be clearly shown by either a surveyed, compiled or calculated connection to enable unambiguous relative location.

For non-freehold parcels, in addition to the acceptable connection methods outlined above, 'about' connections are permitted for non-freehold part lots with 'about' dimensions.

For freehold and non-freehold parcels, the connection shown must be of the same survey status as the parts being connected. However, for connections between fully surveyed compiled boundaries, dimensions may be calculated from prior survey information if no suitable direct connections exist.

4 Physical feature boundaries

Information

See section 1.3 *Definitions and conventions*, page 1.

The surveying profession uses the term 'ambulatory boundaries' to describe boundaries that are defined with respect to a natural feature which are subject to the doctrine of accretion and erosion – that is, they can move gradually and imperceptibly due to natural processes. The location of these boundaries does not move following a sudden change to the feature, and so are no longer 'ambulatory'. The continued use of the term 'ambulatory boundaries' as a descriptor to include boundaries that have not moved with the feature has led to confusion in some instances. To avoid this confusion, the term 'physical feature boundary' is used as a collective term, and is defined as follows (see section 1.3 *Definitions and conventions*):

> *"physical feature boundary, of land, means a boundary of the land whose location follows a physical feature, either natural or artificial, that;*
>
> - *exists now; or*
> - *used to exist, and no longer exists."*

There are a number of types of physical feature boundaries:

- water boundaries, including tidal boundaries and non-tidal boundaries under Part 7 of the *Survey and Mapping Infrastructure Act 2003* (see section 1.3 *Definitions and conventions*);
- other natural feature boundaries, such as cliffs and watersheds; and
- artificial feature boundaries, such as a constructed rock wall that has been adopted as a boundary.

Physical feature boundaries can be either ambulatory or located in a previous location if they have been subject to sudden change. Artificial feature boundaries are always located on the feature and do not ambulate, while water and other natural feature boundaries are ambulatory if their location has not been subject to a sudden change. However, where an artificial feature that has been constructed along a right line boundary, the boundary always remains a right line boundary, not a physical feature boundary.

Since physical feature boundaries are not right line boundaries, they are represented on plans as 'curvilinear' or 'irregular' boundaries.

4.1 Water boundaries – General

Information

Part 7 of the *Survey and Mapping Infrastructure Act 2003* provides for the definition and surveying of the boundaries of land bounded by tidal or non-tidal water. Surveyors are encouraged to familiarise themselves with the following key concepts in Part 7:

- Location at law (throughout Part 7)
- Ambulatory boundary principles (definition – Section 62)
- Source material (definition – Section 62)
- Associated material (definition – Section 62)
- Plans of survey – old, new and reserved (definitions for old & new – Section 62; reserved – section 65)
- Exemption from the rules for surveying boundaries (Section 66 – tidal; Section 95 – non-tidal)
- Boundary location criteria (Section 72 – tidal; Section 100 – non-tidal)
- Declarations (Section 83 – single lot, tidal; Section 93 – multiple lot, tidal; Section 109 – single lot, non-tidal; Section 120 – multiple lot, non-tidal)
- Review and Appeals (Division 6, Sections 122 – 130)

Explanations of these concepts were included in a previous version of this document, but have been removed to avoid the potential for conflict between the explanations and the legislation itself.

4.1.1 Determining relevant provisions

Standard under the SMI Act

See Appendix F *Reports*, page 191.

In dealing with any water boundary, there are steps to determine which provisions of Part 7 apply to individual water boundaries. A surveyor must determine:

- whether the water boundary is an exception under Part 7 (right line boundary, reserved plan of survey, exempt land)
- the type of water boundary (tidal, non-tidal watercourse, non-tidal lake)
- the status of surveys carried out for the water boundary (Old plan of survey, First New Plan of Survey, Subsequent New Plan of Survey, new source material – see 4.1.1.1)
- the nature and location of the previously surveyed water boundary feature and whether it satisfies the location criteria
- the location of the current water boundary feature
- whether there has been any movement in the location of the water boundary feature
- the reason for any movement (gradual and imperceptible change, sudden change, human interference)
- the eligibility to compile all or part of the water boundary under the relevant survey standard

In determining which section or sections of the *Survey and Mapping Infrastructure Act 2003* apply to a water boundary, or parts thereof, tables are provided in Appendix F which contain further information that may assist surveyors.

Historic information may be necessary in determining the location of a water boundary or in determining the application of the ambulatory boundary principles. Recent aerial photography is available to view free of charge through Queensland Globe. Aerial photography projects can be discovered through QSpatial. Scanned historical aerial photography originally captured on film from 1930 to 2009 can be downloaded through QImagery. Geoscience Australia's Elevation Information System (ELVIS) provides free online, open-source elevation data including digital elevation models and point clouds derived from LiDAR. The Department of Environment, Tourism, Science and Innovation is the custodian of historical tidal works approvals issued in Queensland prior to 18 November 2005. These approvals can be searched through Queensland Globe. Queensland's local governments have been responsible for issuing approvals for prescribed tidal works undertaken since 18 November 2005, and will be able to assist with searches for these approvals. (Links to Queensland Globe, QImagery, QSpatial and ELVIS are provided in the *Contacts and Links* section at the beginning of this document).

A survey plan prior to 7 May 2010 can generally be taken to have surveyed a natural feature unless the plan or field notes indicate that an artificial feature or specific tidal plane (e.g. at a reduced level on the Australian Height Datum) was surveyed as the boundary. Under past standards it was common practice for surveyors to adopt a natural feature to represent the water boundary. However, the specific feature was not necessarily labelled on an old plan of survey. Section 65A allows for a presumption to be made that a natural feature was adopted consistently with historical directions, where a natural feature exists in a location corresponding to the boundary location depicted by an old plan of survey.

Surveyors should be aware that the previous feature that the ambulatory boundary principles are applied to, differ between tidal and non-tidal boundaries. For the first new plan of survey of tidal boundaries, the feature is the feature first surveyed from the time of grant or allocation of the land, and for non-tidal boundaries, the feature is the feature that was most recently surveyed.

For a tidal boundary where the original natural feature has been replaced by an artificial feature (e.g. wall), the ambulatory boundary principles are applied to the original natural feature:

- where the original natural feature naturally accreted or eroded until an artificial feature (e.g. wall) was constructed at the location of where the natural feature had reached, then the construction of the wall stopped the natural progression of the boundary and effectively prevented any further movement to its location at that point in time. However, this is in relation to the location of the first wall constructed, and any subsequent reconstructions do not alter that location.

- where the wall was constructed at a location other than the existing natural feature or where the wall was constructed following a sudden event or interference, then the boundary at law is located at the last known location of the natural feature prior to the sudden event or interference.

For a non-tidal watercourse, sections 105 and 108 preclude a surveyor from adopting an entirely different feature that is closer to the other side of the water than the feature that was last surveyed. However, this preclusion does not apply when the previously surveyed feature is currently physically closer (by measurement) to the other side due to gradual and imperceptible movement.

Note: Plans of survey approved for registration by the Minister during the tidal stay for registration (8 Nov 2005 to 7 May 2010) will be treated as first new plans of survey. The feature or other thing that constitutes the tidal boundary on the stay plan should be used for any subsequent survey of the land under subdivision.

4.1.1.1 New source material

Information

Source material consists of the documents that form the identity of land. For freehold land, the source material usually includes the most recently issued deed of grant (but not a subsequently issued certificate of title following a subdivision or a resurvey of all or part of the land). For land dealt with by the *Land Act 1994*, such as roads, reserves, leasehold, licences, or permits, the source material is ordinarily the instrument under which the relevant tenure was dedicated (e.g. an instrument of lease or gazettal of road). Where a plan of survey, a map or other instrument (such as an entry in a register) is contemporaneous with the grant or dedication of land, this may also represent source material for the identity of the land.

Source material relates to the tenure of a parcel. A plan of survey would not represent new source material in relation to an existing water boundary where tenure of the parcel was issued prior to 7 May 2010, regardless of whether the boundaries of the parcel had been surveyed or not (e.g. represented by 'about' dimensions). The continuance of a prior issued tenure (changed or unchanged) is not ordinarily dealt with as new source material. An exception is a plan that dedicates an area of new non-tidal watercourse or lake under section 51 of the *Land Title Act 1994* or section 290JA of the *Land Act 1994*, which is taken as new source material for the new watercourse area.

Sections 89 and 116 of the *Survey and Mapping Infrastructure Act 2003* (*new source material adopted feature rule—tidal and non-tidal*), apply on and from the coming into force of new source material for land. A plan representing new source material is taken to be a first new plan of survey for the land, and any following plan will be a subsequent new plan of survey under these sections.

New source material relates to source material for land that has come into force after 7 May 2010. A new deed of grant or allocation of land after this date will ordinarily represent new source material. For survey of a water boundary, carried out for an action under the *Land Act 1994* where the tenure of the land is, or has reverted to, unallocated land, the plan of survey will ordinarily represent new source material when contemporaneous with the fresh grant or allocation of the land.

Examples of actions where land reverts to unallocated land under the *Land Act 1994* are:

- section 34F – revocation of a reserve
- section 38E – cancellation of a deed of grant in trust (DOGIT)
- section 163, 173 & 327G – surrender of all or part of a lease
- section 230 – resumption of a reservation from a lease or deed of grant in trust (DOGIT)
- section 241 – forfeiture of a lease.

For survey of an existing water boundary, carried out for an action under the *Land Act 1994* where all or part of the land may be 'dealt with as' unallocated land, a plan of survey does not always represent new source material for the land.

Examples of actions where land is 'dealt with as' USL under the *Land Act 1994*, but a plan of survey would not ordinarily represent new source material for the land are:

- section 109 – closed road (included within an adjoining deed, section 358)
- section 164 – rolling term lease.

Treatment of closed road to be added to an adjoining deed:

The definition of *source material* given by section 62 of the *Survey and Mapping Infrastructure Act 2003* describes road as a form of tenure, and that existing road has source material, which is ordinarily the instrument under which the road or reserve is dedicated. Corresponding sections of the *Land Act 1994* state that closed road may be dealt with as USL for the tenure action, but the area does not revert to a distinct area of unallocated land as part of the action. Therefore, the water boundary of the part of closed road being added to the adjoining parcel is ordinarily dealt with as a first or subsequent new plan of survey. The area of closed road is treated as a new plan of survey for the relevant part of the water boundary and would not be taken to represent new source material for the land.

4.2 Surveying tidal and non-tidal water boundaries

Standard under the SMI Act

See section 3.38 *Surveys using remotely sensed data*, page 66.
See section 4.9 *Creating tenure on the water side of a tidal or non-tidal boundary*, page 86.
See section 9.53 *Watercourses—tidal and non-tidal*, page 151.

Where a surveyor is determining the location of a water boundary, the feature must be surveyed in accordance with Part 7. Where the location of a water boundary is determined by direct measurement of a series of points along the watercourse, using means of measurement such as radiations, traverse and offset or GNSS, the following requirements apply, to ensure that all measurement and attribute information is available on the survey plan:

- Where new source material is being introduced, the natural feature or other thing that constitutes the water boundary must be clearly identified and described, either on the plan itself or in the survey records or report. The description of the physical feature must not be ambiguous. For example, simply describing a feature as a bank is not sufficient. The feature of the bank must be described and which particular bank where multiple bank features exist (e.g. top of the only bank, bottom of the uppermost bank, the line between salt tolerant and non-salt tolerant vegetation).
- Right line boundaries leading to the water boundary should be marked to a high standard with a reasonable level of redundancy, because any later reinstatement of the survey relies on its connection to these ‘side boundaries’ (as an option to strengthen the redundancy, this could include connection to the State control survey). Any right line boundary intersecting the water boundary must be labelled as being to the creek or river (for non-tidal) or tidal boundary (for tidal). A station symbol is not to be shown at the point of intersection of the right line boundary and the water boundary.
- The plan must not show station symbols at any of the measured points along the water boundary. Instead, there must be a tabulation of the bearings and distances between the points measured along the boundary, without station numbers, and a statement along the boundary that the measured points lie on the boundary (e.g. D–E in the diagram below). A limited number of alpha identifiers may need to be shown on the boundary to indicate the location of the tabulated information (e.g. D and E in the diagram). There must be a statement along the water boundary referring to the tabulated measurements between the points. For example (see Figure 4-1):

  for river boundary points (D–E) see River Points Table

  for creek boundary points (D–E) see Creek Points Table

  for tidal boundary points (D–E) see Tidal Boundary Points Table.
- The plan must show a curvilinear presentation of the boundary.
- On the watercourse or tidal water side of the water boundary, the appropriate water body must be named (e.g. Nerang River, Baffle Creek, Moreton Bay, Sandy Strait, Portland Road, Cooper Creek etc). In the case of tidal boundaries the boundary must also be labelled ‘tidal boundary’ (or abbreviation ‘tdl bdy’) along its frontage, reflecting the new term as used in Part 7 of the *Survey and Mapping Infrastructure Act 2003*. Terms such as High-Water Mark or HWM must not be used.
- The plan may show the watercourse traverse where a water boundary has been surveyed (e.g. A–B–C in the diagram below).
- Remotely sensed data may be used to survey all or part of a water boundary, provided it meets the requirements of section 3.38 *Surveys using remotely sensed data*. This includes when determining water boundaries on an unsurveyed (‘about’) parcel.

- Also see section 9.53 *Watercourses—tidal and non-tidal* for further details on the plan presentation of water boundaries.

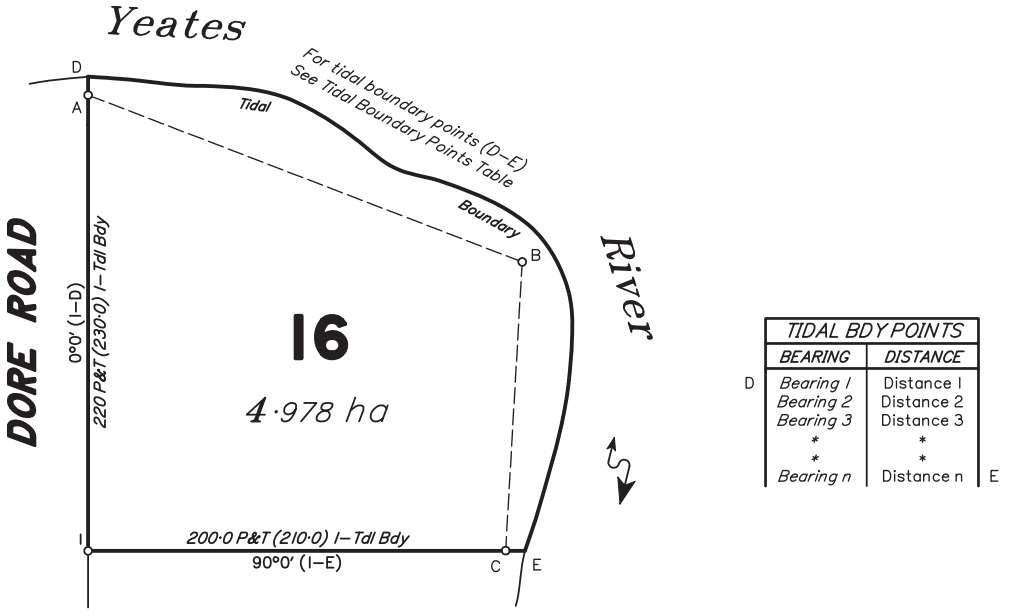


Figure 4-1 Example of water boundary

4.2.1 Plan notations

Prior to 1 November 2021, plans required a notation on the face of the plan indicating the provision of the *Survey and Mapping Infrastructure Act 2003* that was used to define the water boundary. Plans submitted to the department or lodged for registration from 1 November 2021 require the information to be stated in the survey report (see 4.5 *Reporting requirements for surveys*).

4.3 Compiling tidal and non-tidal water boundaries

Information

See section 9.53 *Watercourses—tidal and non-tidal*, page 151.
See section 3.11 *Compiled plans and boundaries*, page 24.

The water boundary provisions of the *Survey and Mapping Infrastructure Act 2003* provide that the location of the boundary at law may change on registration of a first new plan of survey (section 78 for a tidal boundary; section 106 for a non-tidal watercourse boundary).

Section 6(3)(g)(ii) authorises survey standards to be made about the extent to which, and how, searchable registered, or otherwise authoritative, information held by the chief executive or registrar of titles may be used to represent any length of a tidal or non-tidal boundary of land on the plan of survey, instead of resurveying the relevant length of the boundary.

Under this standard it is permissible to represent the water boundary on a first new plan of survey or a subsequent new plan of survey using compiled information, provided that the representation is "to the greatest practicable extent" consistent with the location at law of the boundary.

The rules regarding compilation of water boundaries are more restrictive than was permitted prior to commencement of the current Part 7 of the Act. This is because, either at commencement of the legislation or on registration of a first new plan of survey for land, the location of the boundary at law is different to its location before commencement. It is appropriate to ensure that plans realistically depict the location of the boundary.

A compiled plan for the 'relevant length' of a tidal or non-tidal boundary of land, means a plan of survey for the land that does not involve a resurvey of the relevant length; and represents the relevant length using searchable, registered or otherwise authoritative information.

There are two conditions that must be met to allow compilation of a tidal boundary or non-tidal boundary (watercourse):

1. The representation of the tidal boundary or non-tidal boundary (watercourse) on a new plan of survey for land, together with associated material must, to the greatest practicable extent, be consistent with the location at law of the boundary as provided for by the relevant division of Part 7 of the *Survey and Mapping Infrastructure Act 2003*.

    - For tidal boundaries - Part 7, Division 2, Subdivision 3 - Locating tidal boundaries at law from registration of the first new plan of survey and Division 2, Subdivision 4 - Locating tidal boundaries at law from registration of subsequent new plan of survey; or
    - For non- tidal boundaries - Part 7, Division 4, Subdivision 3 - Locating non-tidal boundaries (watercourse) at law from registration of the first new plan of survey and Division 4, Subdivision 4 – Locating non –tidal boundaries (watercourse) at law from registration of subsequent new plan of survey.

2. A new plan of survey must not be a compiled plan in relation to any length (the relevant length) of tidal or non-tidal (watercourse) boundary unless provided for by this standard.

A first new plan of survey may be a compiled plan of survey in relation to any length (*the relevant length*) of a tidal or non-tidal (watercourse) boundary if—

For a tidal boundary*:*

(a) on the registration of the new plan of survey, the original adopted natural feature rule (tidal) provision (section 80) applies to locate, at law, the tidal boundary as a natural feature adopted in an old plan of survey (the original plan of survey) to represent the tidal boundary; and

(b) the searchable registered, or otherwise authoritative, information held by the registrar of titles or chief executive obtained for the purposes of the first new plan of survey, to the extent it is a compiled plan of survey in relation to the relevant length—

(i) is information included in the original plan of survey and associated material for the original plan of survey; or

(ii) is information that allows the tidal boundary to be represented substantially as required as per this standard, even though no resurvey of the boundary has occurred.

This applies even if a later old plan of survey represented the tidal boundary generally closer to the water subject to tidal influence than the natural feature mentioned in (a).

For a non-tidal boundary (watercourse)*:*

(a) any subdivision of land provided for in the plan of survey does not include the creation of any new right line boundary of land that intersects with the relevant length in its location at law, either prior to, or on the registration of the new plan of survey.

A subsequent new plan of survey may be a compiled plan of survey in relation to any length (the relevant length) of a tidal or non-tidal (watercourse) boundary if—

For a tidal boundary:

(a) the first new plan of survey was not a compiled plan of survey in relation to the relevant length; and

(b) the searchable, registered or otherwise authoritative information held by the registrar of titles or chief executive, obtained for the purposes of the subsequent new plan of survey in relation to the relevant length is information included in the first new plan of survey and associated material for the first new plan of survey.

Further*, the subsequent new plan of survey may be a compiled plan of survey in relation to any length (also the relevant length) of the tidal boundary if—*

(a) the first new plan of survey was a compiled plan in relation to the relevant length; and

(b) the searchable registered, or otherwise authoritative, information held by the registrar of titles or chief executive, obtained for the purposes of the subsequent new plan of survey in relation to the relevant length is the same information obtained for the purposes of the first new plan of survey.

For a non-tidal boundary (watercourse):

(a) the first new plan of survey was not a compiled plan of survey in relation to the relevant length; and

(b) the searchable registered, or otherwise authoritative, information held by the registrar of titles or chief executive, obtained for the purposes of the subsequent new plan of survey in relation to the relevant length is information included in the first new plan of survey and associated material for the first new plan of survey.

***Further**, the subsequent new plan of survey may be a compiled plan of survey in relation to any length (also the relevant length) of the non-tidal boundary (watercourse) if—*

(a) the first new plan of survey was a compiled plan in relation to the relevant length; and

(b) the searchable registered, or otherwise authoritative, information held by the registrar of titles or chief executive, obtained for the purposes of the subsequent new plan of survey in relation to the relevant length is the same information obtained for the purposes of the first new plan of survey; and

(c) any subdivision of land provided for in the subsequent plan of survey does not include the creation of any new right line boundary of land that intersects with the relevant length in its location at law, either prior to, or on the registration of the subsequent new plan of survey.

Source information such as an old plan of survey (or other searchable, registered or otherwise authoritative information) must identify the feature adopted for the first new plan as the boundary subject to compilation. See 4.1.1 *Determining relevant provisions* for clarification about when an old plan of survey may be considered to have adopted a natural feature.

Sudden change occurring to a tidal boundary or non-tidal (watercourse) boundary

Subject to the ambulatory boundary principles, where a water boundary has been subject to physical change which was not gradual and imperceptible, the location of the boundary does not change and must be determined from the source information of the feature prior to the sudden change. The source information is usually the plan that last surveyed the feature but can be another source such as remotely sensed data. However, where the location of the boundary is determined from remotely sensed data, the boundary is not compiled but surveyed in accordance with the requirements of section 3.38 *Surveys using remotely sensed data*.

4.3.1 General plan presentation requirements

Where a plan is to be prepared using compiled information to depict the location of the water boundary, the presentation of the plan of survey must be consistent with the requirements of section 4.2 *Surveying tidal and non-tidal water boundaries* to the extent that they can be applied to a compiled boundary.

Where the natural feature surveyed on a previous plan still exists in practically the same location and it satisfies the location criteria, the boundary can be compiled from that plan (that is, the plan that previously surveyed the feature).

Where the boundary is compiled from a previous survey plan, the points on the boundary are labelled as ‘orig’ in the points table. The existing side boundaries intersecting on the water boundary are labelled to the water boundary with the addition of the qualifier ‘orig’.

When compiling the water boundary from a previous plan of survey that surveyed the feature, the plan catalogue number of that previous plan must be shown along the watercourse. While traverses of watercourses may be shown on the plan where a water boundary has been surveyed, there is no necessity to show the original traverse when compiling the water boundary.

Where a calculated area is shown for a lot, the original watercourse dimensions must be shown in a points table, except for cases involving a vast number of original creek, river or tidal boundary points, where the original plan number shown along the watercourse boundary will suffice, provided survey records that include the area calculations are submitted. Additional information supporting the calculation of the area may be recorded in the survey records lodged with the plan. A points table may contain both original and surveyed watercourse dimensions.

Where the area of a lot is to be a balance area or an about area, a points table is not required, but may be shown.

Where a plan contains a combination of a survey of part of a tidal or non-tidal boundary, and a compilation

of the relevant length under this standard, the extent of the surveyed part must be sufficient to provide continuity with the compiled part. For example, where a new right line boundary intersects an existing non-tidal watercourse boundary, and the relevant length of the non-tidal boundary is being compiled, the extent of the part surveyed will as a minimum be between the offset points on the watercourse boundary either side of the right line boundary intersection where the watercourse boundary is generally in the same location as determined by the previous plan (see Figure 4-2 below).

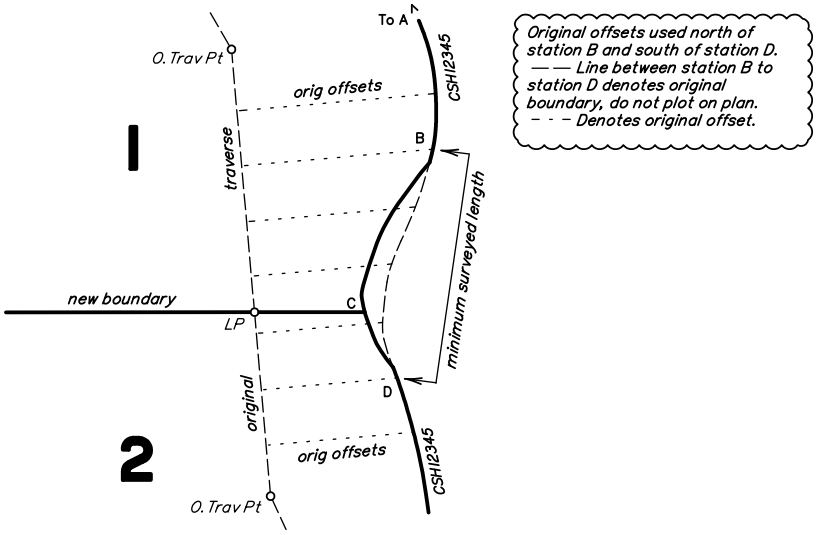


Figure 4-2 Minimum surveyed length for intersection of new right line boundary

Where a new right line boundary intersects an existing **tidal** boundary, and the location of the tidal boundary is adopted from original survey information, the newly surveyed right line boundary would be surveyed in part to a mark, with the remaining segment of that boundary being calculated to intersect with the original tidal boundary. The last segment of this line would be qualified as "calc" with an additional qualification as 'Tdl bdy' or 'Tidal boundary'. The overall distance for the line must be shown as 'by addition', see Figure 4-3.

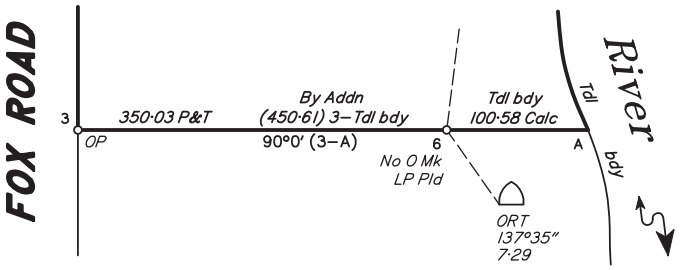


Figure 4-3 Example of new right line boundary intersecting a tidal boundary

Note that while a calculated distance to the watercourse is permissible for a tidal boundary, this is not permissible for a non-tidal watercourse boundary, except in the following situation. If there has been sudden change, the non-tidal watercourse boundary is located where the natural feature was before the sudden change occurred. If the plan of survey is using the previous plan to determine the location of the feature before the sudden change occurred, then the relevant length of the water boundary is being compiled from that plan. In this situation, it is permissible to show a calculated distance on a new right line boundary that intersects the non-tidal watercourse boundary. For example, 8–B in Figure 4-4 below:

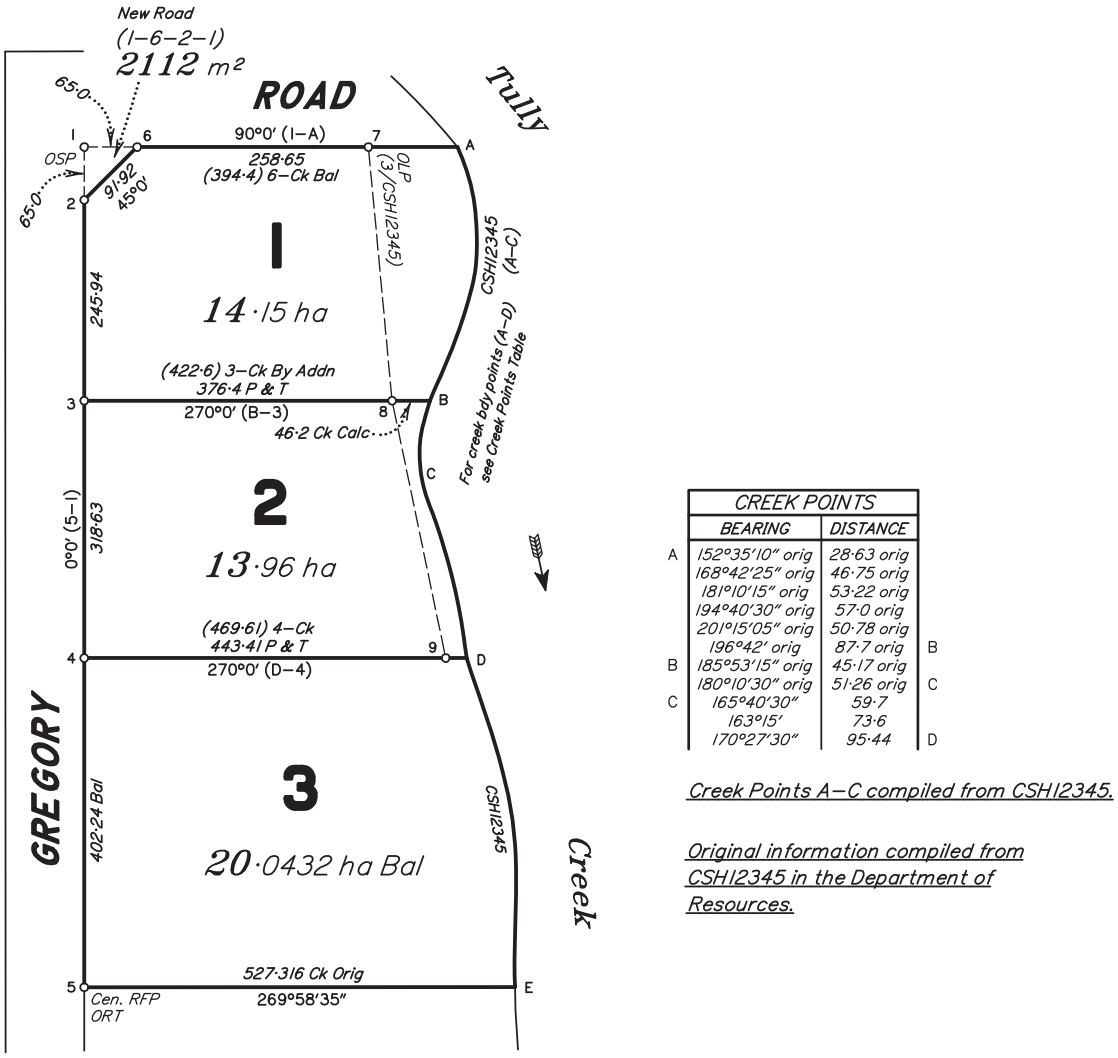


Figure 4-4 Example of a non-tidal water boundary

4.4 Plans of survey of a secondary interest only

Information

A plan of survey which is a survey of secondary interests only (i.e. it does not reconfigure the land) is not a plan of survey for the land, so does not affect the location at law of the water boundary. Such a plan is not a first new plan of survey or a subsequent new plan of survey for the land.

Standard under SMI Act

On a plan of survey of a secondary interest only that has a water boundary, the location of the water boundary of the secondary interest may be either compiled from the current plan of survey for the land or determined by surveying the relevant part of the water boundary of the land.

Where the water boundary is surveyed, the feature surveyed is the feature that constitutes the current location at law of the water boundary. In general, this will be the natural feature or other thing that constitutes the boundary on the current plan of survey for the land. The remainder of the water boundary of the land may be compiled.

Where a secondary interest extends to the water boundary (and the water boundary is compiled), the intersection of the secondary interest boundary with the water boundary may be calculated using the information that was used to prepare the current plan of survey for the land. The newly surveyed right line boundary would be surveyed in part to a mark, with the remaining segment of that boundary being calculated to intersect on to the original water boundary. The last segment of this line would be qualified as 'calc' with an additional qualification as to the particular feature 'Ck' or 'Riv' or 'Tidal boundary'. The overall distance for the line must be shown as 'by addition'.

Where the water boundary is compiled, a calculated area can be determined for the secondary interests using the source information (e.g. the original traverse and offsets from the survey records of the original survey). A river points table must be provided, for both surveyed and compiled information along the water boundary if a calculated area is shown.

Guideline under Standard 4.4 Plans of survey of a secondary interest only

In circumstances, where the location of the water boundary is critical to the secondary interest (for example, where the area of a lease over freehold land is relevant to its definition), consideration should be given to surveying the water boundary of the secondary interest. See section 4.2 *Surveying tidal and non-tidal water boundaries*.

4.5 Reporting requirements for surveys

Standard under the SMI Act

See 3.37 *Survey reports*, page 64.
See Appendix F *Reports*, page 191.

Water boundary reports must satisfy the requirements of this standard. Examples are provided as a guide in Appendix F however in some instances, they will require the surveyor to provide additional references to, or copies of, information, to support the statements made or conclusions drawn in the report. It is preferred that reports that consists of text only be provided by inclusion on the survey plan (front of the plan or additional sheet), as appropriate. A report that contains non-textual information must be submitted as survey records with the survey plan.

4.5.1 Plans of survey

Where a plan of survey (e.g. first new plan of survey, subsequent new plan of survey, new source material, survey of exempt land, identification survey or reserved plan of survey) involves survey or compilation of a water or lake boundary, the following information must be provided:

- a report addressing:
    - the relevant provisions of the *Survey and Mapping Infrastructure Act 2003* that are applicable or used to define the water boundary.
    - a clear description of the natural feature or other thing that constitutes the water boundary (supported by photographs where relevant)
    - if boundary location criteria are being used to identify the feature that constitutes the boundary, how each of these are satisfied by the adopted feature in its surveyed location (including, where relevant, the public interest assessment. See section 4.8 *Public interest assessment (tidal)*)
    - where relevant to the current determination, a description and location and extant evidence of the natural feature adopted by the original surveyor and/or any subsequent surveys
    - where the feature that constitutes the water boundary was adopted on a previous survey and there has been significant movement of the feature, a description of the investigation undertaken, and the evidence identified, to establish how such movement has satisfied the relevant aspect of the ambulatory boundary principles (see section 62 of the *Survey and Mapping Infrastructure Act 2003*) (i.e. was it, or was it not, 'gradual and imperceptible', and what is the basis for that conclusion?).
    - where relevant to the current determination, an assessment of the stability and permanency of the feature

- where sudden change has affected the land (flood, storm or human activity), evidence of the former location of the adopted feature
- where there has been a significant movement from the previous recorded location of a watercourse, evidence that the new location of the subject boundary does not affect the property on the opposite side of a watercourse.
    - If it is apparent that there has been such a significant change in the watercourse and subject to the ambulatory boundary principles, the new location of the boundary extends into the area that is included on a current survey plan of land on the other side of the watercourse, the requirements as per sections 19 and 20 of the Survey and Mapping Infrastructure Regulation 2024 apply.

A plan of survey of secondary interest only that has a water boundary compiled from the current plan of survey for the land is not required to provide a survey report.

4.5.2 Plans with compiled water boundary information

Where plans of survey involve the compilation of a water boundary (except for plans of a secondary interest only, surveys of exempt land or reserved plans of survey), the following additional information (as appropriate) must also be provided:

- a description of how the relevant requirements of standard 4.3 *Compiling tidal and non-tidal water boundaries* have been met, to allow the relevant length of the water boundary to be compiled.
- a description of how it was confirmed that the compiled boundary is to the greatest practicable extent, consistent with its location at law.

4.5.3 Identification surveys as source of water boundary information

Information

See section 4.16 *Identification survey plans involving a water boundary,* page 90.
See F.2.1 *Surveying tidal boundaries,* page 193.
See F.2.2 *Surveying non-tidal watercourse boundaries*, page 198.

As publicly searchable and authoritative information, an identification survey can be used as a source for compilation of a water boundary. The survey report of the identification survey must contain sufficient survey information so that compilation from the identification plan would satisfy reporting requirements for the first or subsequent new plan of survey.

Different rules apply to an identification survey depending on whether the land is subject to an old plan of survey, or a first new plan of survey. To be used as a source for compilation for a new plan of survey, the identification survey must have surveyed the same feature that is being identified as the boundary for the new plan of survey. An example is when an identification survey is used to record the surround survey of an area subject to future redevelopment, and the boundary feature will remain consistent between the identification survey and first new plan of survey for subsequent stages.

Where compiling a water boundary from an identification survey, the first or subsequent new plan of survey is still required to satisfy applicable requirements of section 4.3 *Compiling tidal and non-tidal water boundaries* and address the reporting criteria under section 4.5 *Reporting requirements for surveys*. An identification survey will survey the feature which represents the current location of the boundary at law. Thus, an identification survey would not be a suitable source to compile the location of an alternative feature for a FNPOS under section 81 of the SMI Act, nor be a suitable source of compilation if it identified a feature other than the adopted natural feature as provided for a FNPOS under section 80 or section 108 of the SMI Act.

4.6 Single lot declarations (tidal and non-tidal)

Information

Sections 83 and 109 of the *Survey and Mapping Infrastructure Act 2003* provide for the chief executive to make a single lot declaration about the location of the water boundary, but only where the circumstances set out in the relevant section apply (section 83(5) - tidal or 109(4) - non-tidal). The declaration may be made only after a surveyor has lodged a plan or has submitted a plan with the intention to lodge it at a later

date. The chief executive or Registrar of Titles can defer dealing with the plan in order for the chief executive to investigate the matter and make a declaration. There is an extensive notification and appeal process which is required to be exhausted before the declaration can be made. Therefore, where a surveyor anticipates that it may be necessary to obtain a declaration in relation to the boundary, it is desirable that the surveyor seek advice from the department prior to finalising and submitting a plan, to minimise delays in the registration of the plan.

Under section 25A the chief executive has authority to direct a surveyor to obtain relevant evidence to assist with making a boundary declaration. The need for additional evidence after submitting a plan is reduced if preliminary advice is sought from the department and the surveyor presents sufficient rational and relevant supporting evidence to support the proposed water boundary location.

Standard under the SMI Act

On request from the chief executive, the surveyor must provide the following in relation to the water boundary:

- evidence that the relevant circumstances exist for a declaration
- documented reasons, supported by evidence of any investigations carried out, why one of the other rules cannot, or should not, be adopted to define the boundary
- a proposed location for the boundary and the rationale and relevant supporting evidence for that location, based on the provisions of the relevant single lot declaration section of the Act.

4.7 Preparation of a reserved plan of survey

Standard under the SMI Act

See section 4.2.1 *Plan notations*, page 77.

It is strongly recommended that advice is sought from the department about the preparation of a reserved plan of survey on a case-by-case basis. Where the department provides a Survey Advice file reference in relation to such a request, the file reference must be noted on the plan in the Surveyor file reference item on the plan administration sheet (sheet 2).

A reserved plan of survey is a plan registered after commencement of section 65 of the *Survey and Mapping Infrastructure Act 2003*, but is not taken to be a first new plan of survey for the land. A reserved plan of survey cannot be prepared after new source material, or a first new plan of survey is registered for the land.

Prior to amendment by the *Land and Other Legislation Amendment Act 2023*, section 65 required a reserved plan of survey to be certified by the chief executive or Registrar of Titles. This is no longer required, and a reserved plan of survey may be lodged for registration without a letter of certification.

Subject to section 65, a reserved plan of survey may be used in the following circumstances:

- Section 65(4)(a) - prepared and registered only for the purpose of a disposal of, or other dealing with, part of the land under the *Land Act 1994* for a public purpose under that Act. The definition of 'public purpose' under the *Land Act 1994* includes a community purpose under that Act or a purpose for which land may be taken under the *Acquisition of Land Act 1967*. For example:
    - reconfiguration of state land parcels for a community purpose under the *Land Act 1994* (e.g. community purpose reserves),
    - survey of land to be acquired by a constructing authority under the *Acquisition of Land Act 1967* - the Notice of Intention to Resume (NIR) may require notation or allocation on a plan of survey that affects the subject land,
    - dedication of road, or the simultaneous opening and closure of road (if prepared only for that purpose). An action to close road does not qualify as a reserved plan of survey when the closed road is to be amalgamated with an adjoining freehold parcel, as there is no public purpose consideration for such a dealing under the *Land Act 1994*,
    - plans of survey prepared only for a dealing under the *Land Act 1994* and only for a public purpose under that Act i.e. a reserved plan of survey cannot be used to dedicate new road as well as subdivide land without any public purpose consideration,

- plans of survey which affect a dealing under the *Land Title Act 1994*, without public purpose consideration, do not qualify as a reserved plan of survey,
- survey of state land for conversion to freehold is not to be dealt with as a reserved plan of survey.

- Section 65(4)(b) - prepared and registered for the purposes of a development approval under the repealed *Sustainable Planning Act 2009* as in force at the commencement of this part, other than for the purposes of an amendment of the development approval made after the commencement of this part.
  - Generally, subsection 4(b) no longer applies to new surveys. The plan must be for the purpose of development approval that was given prior to 26 March 2010 and not subject to subsequent amendment.
- Section 65(4)(c) - prepared on the basis of a survey performed before the commencement of this part for the purposes of work directed or authorised under a regulation under the *State Development and Public Works Organisation Act 1971* to be undertaken or completed by an entity.
  - Subsection 4(c) does not apply to new surveys. It is not anticipated there are outstanding surveys authorised under the *State Development and Public Works Organisation Act 1971* and carried out prior to 26 March 2010.

4.8 Public interest assessment (tidal)

Information

In the tidal boundary location criteria of the *Survey and Mapping Infrastructure Act 2003*, the third criterion is that the location of the boundary is consistent with the public interest (section 72(3)). Public interest is defined in section 62 of the Act to include the 'cultural, environmental, heritage, land protection, planning, recreational, social, and strategic interests of the public'.

The primary purpose of the public interest assessment is to determine whether adopting a feature that satisfies the other location criteria would be contrary to the public interest, in the following circumstances:

- under section 81 of the Act, applying the alternative natural feature exception, the public interest assessment will apply to the land between the original natural feature and the alternative natural feature,
- under section 82 of the Act, applying the applied criteria exception, the public interest assessment will apply to ensure that, if a feature or other thing satisfies the other tidal boundary location criteria, it is not contrary to the public interest to incorporate into the adjoining parcel any of the land on the landward side of the proposed location of the boundary,
- under section 83 of the Act, making a single lot declaration, the public interest assessment will apply to ensure that, if the proposed location of the boundary satisfies the first and second tidal boundary location criteria, it is not contrary to the public interest to incorporate into the adjoining parcel any of the land on the landward side of the proposed location of the boundary,
- under section 93 of the Act, making a multiple lot declaration, the public interest assessment applies to the chief executive to ensure that, if the proposed location of the boundary satisfies the first and second tidal boundary location criteria, it is not contrary to the public interest to incorporate into the adjoining parcel any of the land on the landward side of the proposed location of the boundary.

On registration of the plan, all land on the water side of the tidal boundary will become or remain the property of the State (see section 9 of the *Land Act 1994).*

Standard under the SMI Act

It is the responsibility of the surveyor conducting the survey to come to a conclusion about whether the location of the boundary is consistent with the public interest. The public interest information requirements set out below are designed to assist surveyors in coming to a conclusion regarding public interest.

The information used to undertake the public interest assessment must be provided by the surveyor for review by the department when requested. Sources of information may include print and electronic media, photos or images, web-based material, personal accounts (appropriately authenticated) etc. Assessment of

the information by the surveyor must be objective and unbiased in terms of both the compilation of material and the conclusions drawn on the basis of that material.

In certifying the accuracy of a survey plan (Form 13 or 18) the surveyor must be satisfied with the accuracy of any information the surveyor relies on to undertake the survey. Where a surveyor obtains information to undertake a public interest assessment, including where the surveyor relies on other professional persons to compile a report, the surveyor must be satisfied with the accuracy of such information.

Public Interest Information Requirements

1. Where the proposed boundary location would conflict with development conditions applying to the subject land, where such conditions have been designed to protect the public interest, it may be necessary to demonstrate that the boundary location would not contravene the development conditions.

   Note: for example, where a development condition has been designed to protect the public interest by requiring specific land to be dedicated as parkland.

2. Where the proposed tidal boundary location encroaches onto land that is associated with an Indigenous or European cultural heritage site, it may be necessary to demonstrate that the boundary location would not increase the vulnerability of heritage values to potential damage or loss.

   Note: for example, where the boundary is proposed to be located on land that is listed on the Queensland Heritage Register.

3. Where the proposed boundary location encroaches onto land that is associated with environmental protection for vegetation or habitat, it may be necessary to demonstrate that the boundary location would not increase the vulnerability of environmental values to potential damage or loss.

   Note: for example, where the boundary is proposed to be located on land that has native vegetation that is shown as 'endangered' or 'of concern' remnant vegetation on regional ecosystem mapping.

4. Where the proposed boundary location encroaches onto land that is associated with management of land degradation resulting from soil erosion, landslip, or weed or pest infestation, it may be necessary to demonstrate that the boundary location would not increase the vulnerability of land protection values to potential damage or loss.

   Note: for example, where the boundary is proposed to be located on land that has an active management program being undertaken by the state or local government to manage land degradation.

5. Where the proposed boundary location encroaches onto land that is associated with any current or impending community recreation or open space purposes, it may be necessary to demonstrate that the boundary location would not prevent or diminish such use.

   Note: for example:

   - *the designation of the land in a local government planning scheme as being for open space, recreation, public access or like designations*
   - *policies (e.g. expressed through overlays, local planning policies, or codes in planning schemes) that intend for the boundary to be set back from the waterway or coastline, where the boundary is proposed to be located closer to the water than the setback allows*
   - *plans for a public access way or park along a river, as documented in an existing or draft state or local planning instrument, where the boundary location encroaches into this area.*

4.9 Creating tenure on the water side of a tidal or non-tidal boundary

Standard under the SMI Act

See section 3.38 *Surveys using remotely sensed data*, page 66.
See section 4.13 *Title amendment for physical feature boundaries*, page 89.
See section 9.53 *Watercourses—tidal and non-tidal*, page 151.

Section 13 of the *Land Act 1994* provides for land that is on the seaward side of a tidal boundary or right line tidal boundary, other than inundated land, to be leased, granted, occupied, sold or transferred only under the authority of an Act. Section 13AA of the *Land Act 1994* enables non-tidal watercourse land and non-tidal lake land to be leased or dedicated as a reserve.

For dealings under the *Land Act 1994*, land that is on the water side of a tidal boundary, a right line tidal boundary or non-tidal watercourse boundary must be identified by a separate lot to that of the land on the landward side of the tidal or non-tidal watercourse boundary.

Where a "wet" lease/reserve (either standard or volumetric) is to have a tidal or watercourse boundary, such a boundary will be the tidal or watercourse boundary of the adjoining "dry" land lot/s. The provisions of Part 7 of the *Survey and Mapping Infrastructure Act 2003* determine the location at law of the tidal or watercourse boundary for the "dry" land lot/s (which is to be the common boundary). The relevant provisions are:

- where the water boundary for the adjoining "dry" land lot is defined by an old plan of survey, the location of the water boundary is in accordance with Division 2, Subdivision 2 or Division 4, Subdivision 2. Where the boundary does not comply with the location criteria, section 65B applies to the location of the water boundary for the "wet" lot, until registration of a first new plan of survey for the "dry" land lot.
- where the water boundary for the adjoining "dry" land lot is defined by a first new plan of survey, the location of the water boundary is in accordance with Division 2, Subdivision 3 or Division 4, Subdivision 3.
- where the water boundary for the adjoining "dry" land lot is defined by a subsequent new plan of survey, the location of the water boundary is in accordance with Division 2, Subdivision 4 or Division 4, Subdivision 4.
- where the adjoining "dry" land lot is a USL parcel, the location of the water boundary is in accordance with Division 2, Subdivision 5 or Division 4, Subdivision 5.

The survey report must contain a statement indicating that the tidal or non-tidal (watercourse) boundary of the "wet" lot is the relevant part/s of the tidal or non-tidal (watercourse) boundary of the "dry" lot/s. For example:

> *New Lot 113 is surveyed for issue of a new lease from the Green River, and the plan will represent new source material subject to section 89 of the SMI Act.*
>
> *The water boundary of new Lot 113 is the relevant parts of the adjacent water boundaries as previously surveyed by Lot 14 on SP199160 (A to B) and Lot 2 on SP314041 (B to C).*
>
> *For A to B, SP199160 is an old plan of survey, and the location of this part of the adjoining tidal boundary has been determined subject to section 76 of the SMI Act. The relevant feature is <the feature> as confirmed by XXX imagery.*
>
> *For B to C, SP314041 is a first new plan of survey subject to section 80 of the SMI Act. The relevant part of the adjoining tidal boundary is <the feature> shown on SP314041.*

4.10 Jurisdiction over watercourses (non-tidal)

Information

See section 4.12 *Downstream limits of non-tidal watercourses*, page 89.

Under the *Water Act 2000*, the State has jurisdiction over activities that may be carried out in any watercourse, whether or not it is a boundary watercourse. The land within non-boundary watercourses is usually included within the original grant, while the land within a boundary watercourse is the property of the State.

Note that amendments of the *Water Act 2000* made by NROLA 2010 provided a new definition for the extent of jurisdiction of the Water Act in non-tidal watercourses, based on natural features (section 5A) and generally further away from the water than the boundary. Surveyors may be called upon to provide advice on the extent of jurisdiction under this new definition. Reference should be made to the *Water Act 2000* and the relevant regulations under that Act for the particular criteria that must be used. The chief executive may declare the location of the outer bank of watercourses, for the purpose of defining the extent of jurisdiction.

The construction of a weir or barrage on a watercourse may physically alter the downstream limit on the watercourse. The effect of section 70 of the *Survey and Mapping Infrastructure Act 2003* is that a tidal boundary cannot exist above a weir or barrage, even if the watercourse was previously tidal.

Where a weir or barrage has been constructed on a watercourse and the water boundaries of the lots upstream are submerged as a result, the sudden change provisions of the ambulatory boundaries principles apply to the location of the watercourse and watercourse boundaries upstream from the weir or barrage.

4.11 Dealing with internal watercourses

Standard under the SMI Act

See section 4.2 *Surveying tidal and non-tidal water boundaries*, page 76.
See section 3.31 *Public use land*, page 54.

When a parcel of freehold land with an internal (i.e. non-boundary) watercourse is subdivided, subject to any planning requirement, there are three options for dealing with the internal watercourse. These options are:

- the watercourse is wholly contained within a new lot (the watercourse remains as a non-boundary watercourse). By way of example, a road widening or subdivision on the frontage of a large rural parcel may result in the balance lot still containing an internal watercourse; or as a condition of a subdivision, a local government may require that an area of land wholly containing the watercourse be surrendered for community purposes as freehold in trust.
- the watercourse is wholly contained within a new lot, but the outer side of the watercourse forms the boundary of a new lot or lots. When the watercourse (or part of the watercourse) forms the boundary of a new lot, any such boundary of the watercourse must be surveyed as a physical feature boundary and the feature adopted be appropriately described in the survey records. The inner side of the watercourse is dealt with as an internal watercourse. The watercourse remains as a non-boundary watercourse.
- the watercourse is dedicated (opened) as watercourse on registration of the survey plan (section 51 of the *Land Title Act 1994* or section 290JA of the *Land Act 1994*: effective since 14 May 2013). When the watercourse (or part of the watercourse) forms the boundary of a new lot, any such boundary of the watercourse must be surveyed as a water boundary and align with the relevant watercourse location criteria and the feature adopted be appropriately described in the survey records. In this case the watercourse itself is surveyed, dimensioned and is identified as new watercourse (e.g. new creek) with its area, but is not given a lot number, similar to the treatment of new road. For example:

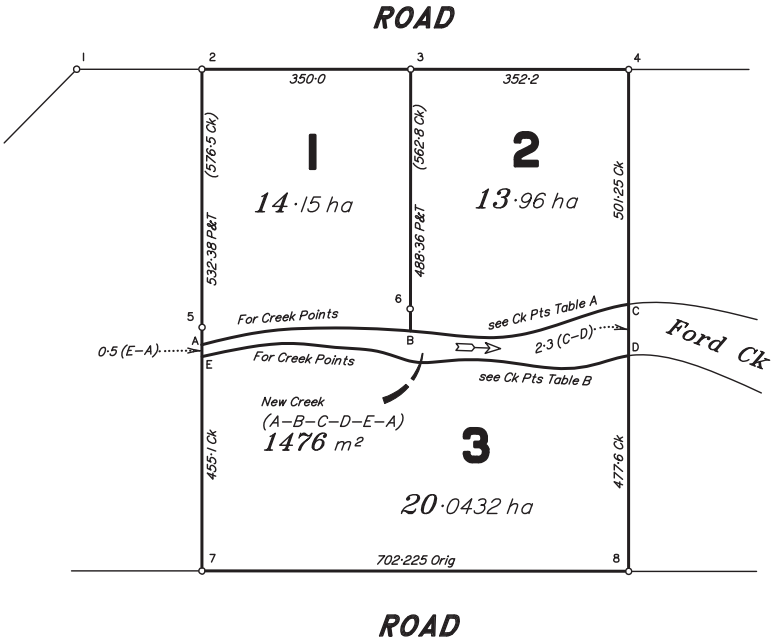


TABLE A

	CREEK POINTS		
	BEARING	DISTANCE	
A	Bearing 1	Distance 1	
	Bearing 2	Distance 2	
	Bearing 3	Distance 3	B
B	"	"	
	"	"	
	Bearing n	Distance n	C

TABLE B

	CREEK POINTS		
	BEARING	DISTANCE	
D	Bearing 1	Distance 1	
	Bearing 2	Distance 2	
	Bearing 3	Distance 3	
	"	"	
	"	"	
	Bearing n	Distance n	E

Figure 4-5 Example of new watercourse

Survey of a state land parcel may also deal with a watercourse to be dedicated (opened) by registration of a plan of subdivision (section 290JA of the Land Act 1994). In this case the watercourse itself is to be surveyed, dimensioned and is identified as new watercourse (e.g. new creek) with its area, but is not given a lot number, similar to Figure 4-5 above.

4.12 Downstream limits of non-tidal watercourses

Information

See section 4.10 *Jurisdiction over watercourses (non-tidal)*, page 87.

In deciding whether a watercourse adjoining land is tidal or non-tidal, particular note should be taken where a "downstream limit" had been defined under the *Water Act 2000*. The Watercourse Identification Map shows the known extent of watercourses and drainage features that are managed under the *Water Act 2000*, including the defined downstream limits. The Watercourse Identification Map can be viewed on the Queensland Globe and accessed through the Inland Waters category globe. See <www.business.qld.gov.au/industries/mining-energy-water/water/maps-data/watercourse-map>.

By section 70(2) of the *Survey and Mapping Infrastructure Act 2003*, and despite any indications otherwise provided by original survey plan notations or symbols, where a downstream limit has been defined, the boundary of land adjoining the watercourse upstream of the defined limit is dealt with in accordance with the provisions of Division 3 and Division 4 *Non tidal land*. Where no downstream limit has been defined, tidal water is determined by observation and reference to section 70(1) of the *Survey and Mapping Infrastructure Act 2003*. Information regarding tides should be directed to the tidal unit of the Department of Transport and Main Roads[9].

4.13 Title amendment for physical feature boundaries

Information

See section 4.2 *Surveying tidal and non-tidal water boundaries*, page 76.
See section 3.31 *Public use land*, page 54.

Where it is found on resurvey of a physical feature boundary of freehold land that the boundary has moved by gradual and imperceptible degrees in accordance with the *ambulatory boundary principles* (section 62 of the *Survey and Mapping Infrastructure Act 2003*), the new location of the feature can be recorded by the lodgement and registration of a freehold plan of resurvey (section 50 of the *Land Title Act 1994*).

Where land that is bounded by a physical feature boundary has changed *by other than* gradual and imperceptible degrees, whether addition or loss, the boundary itself does not move. In such cases, if the landowner wished to have the boundary located in accordance with the physical shape of the land, this can be achieved by:

- in the case of 'lost land', a freehold plan of subdivision which surrenders the 'lost' non-tidal land by opening the area as new creek, river or lake, subject to the consent of the local government. Where the 'lost' land is tidal, then a freehold plan of resurvey can be lodged to record the new location of the tidal boundary.
- in the case of addition (i.e. reclamation), the lodgement of a State land plan, and the surrender of the current title to the land and re-grant of a new deed under the provisions of section 358(2) of the *Land Act 1994*. Arrangements are made with the department to purchase the additional land (see section 10 & 127 of the *Land Act 1994*).

Standard under the SMI Act

Where a plan of resurvey is prepared under the *Land Title Act 1994*, the boundary is to be surveyed in accordance with section 4.2 *Surveying tidal and non-tidal water boundaries*.

Where a plan is prepared under the *Land Act 1994*, there are two possible situations:

- Land has been added. The new seaward boundary is to be surveyed as a right line tidal boundary,

[9] The tidal unit can be contacted by email at tides@msq.qld.gov.au.

and the plan is a plan of the following type:

Lot X cancelling Lot X and USL (being part of the Coral Sea).

- Land has been removed. The new boundary is to be surveyed as a right line boundary, and the plan is a plan of:

  Lot X and Lot Y cancelling Lot X.

  Lot Y is shown as Public Use land (PUL) and would become USL on registration of the plan, through the lodgement of a Statement of Intent with the plan.

4.14 Former watercourse land

Information

Section 13B of the *Land Act 1994* deals with former non-tidal watercourse land. This is land that was a boundary watercourse and ceases to become part of the functioning watercourse due to a change and is not likely to again become part of the watercourse. Section 13B provides for an adjoining owner to apply for the land to be declared as former watercourse land, the powers for the chief executive (water) to make the declaration, and for the land to be dealt with as if it were unallocated State land.

Standard under the SMI Act

Where former watercourse land is to be freeholded, a plan must be prepared identifying the land with a lot number and showing an area so that it can be dealt with under the *Land Act 1994*. The survey plan must contain the notation:

Lot # is former watercourse land

The boundaries of the former watercourse land will be located where the watercourse boundary was at law, immediately before the sudden event(s) occurred. The boundary of the former watercourse land, other than the common boundary between the former watercourse and the applicant's land, must be surveyed and marked at sufficient intervals to enable it to be identified on the ground. The boundary remains as a curvilinear boundary (i.e. not a series of right lines between the marks). The former watercourse boundary common with the applicant's land may be compiled for the purpose of plan presentation and calculating the new lot area, provided that the information used to compile the boundary is, to the greatest practicable extent, consistent with its location at law.

4.15 Declared beach area

Information

The Minister, under the section 431Q of the *Land Act 1994*, may declare a conditional right of public access over private land where, due to erosion, the access along the area of beach has been compromised by the beach area encroaching into the private land. The section requires the declared beach area to be surveyed and that the area is to be ambulatory so that the public access rights move with the natural movement of the beach. The declaration of part of a lot as a declared beach area does not affect the location at law of any external boundary of the lot, whether a right line boundary or a tidal boundary.

A survey of an area intended to be declared as a declared beach area is prepared as a plan of proposed easement in the affected lot, with the boundary of the landward side of the proposed easement (proposed declared beach area) being surveyed as a natural feature in accordance with section 4.17 *Other natural features as boundaries*.

4.16 Identification survey plans involving a water boundary

Information

See F.2.1 *Surveying tidal boundaries,* page 193.
See F.2.2 *Surveying non-tidal watercourse boundaries*, page 198.

Identification surveys are not new plans of survey, therefore where required they should identify the current location of the boundary at law. Prior to the first new plan of survey for the land, the relevant provisions of Part 7 of the *Survey and Mapping Infrastructure Act 2003* are contained in Subdivision 2 of Division 2 (tidal boundaries), and Subdivision 2 of Division 4 (non-tidal boundaries (watercourse)).

When an identification survey locates the current location at law of a water feature boundary, it must comply with the relevant parts of standard 4.2 *Surveying tidal and non-tidal water boundaries* and 4.3 *Compiling tidal and non-tidal water boundaries*. Only the location at law is to be shown on the main plan in subject style. Diagrams may be used to show locations of current or historical physical features, or historical boundaries, to assist in demonstrating how the determination was made for the survey. Depictions of physical features or historical boundaries within diagrams must be shown as light broken lines.

4.17 Other natural features as boundaries

Standard under the SMI Act

See section 3.26 *Natural boundaries*, page 49.
See section 9.54 *Watersheds*, page 152.

Other natural physical features may be adopted as cadastral boundaries (e.g. a cliff, watershed). Surveys of such natural features must comply with section 4.2 *Surveying tidal and non-tidal water boundaries*, except those aspects that are relevant only to water boundaries.

5 Approvals

5.1 General

Information

Approvals and/or consents referred to in this section are not necessarily a survey requirement but may be required to enable the plan to register or, in the case of State land, for the proposed action to be completed.

Generally, consents etc. are noted on the back of the plan.

5.2 Amalgamations

Information

See section 50(h) of the *Land Title Act 1994*.

5.3 Beach Protection Authority

Standard under the Beach Protection Act

See section 45 of the *Beach Protection Act 1968* (now repealed).
See section 179 of the *Coastal Protection and Management Act 1995*.

The *Beach Protection Act 1968* has been repealed and is replaced by the *Coastal Protection and Management Act 1995*.

Where local government development approval prior to 20 October 2003 required the consent of the Beach Protection Authority on the reverse of the plan, there are transitional arrangements that allow for that Authority to provide such consent.

For development approval after 20 October 2003, for reconfiguration of land wholly or partially within a coastal management control district, the local government acting as assessment manager grants approval to the plan. As the department is a concurrence agency to the development approval, no endorsement by the department is required on the plan.

5.4 Border surveys (State border of Queensland)

Standard under the SMI Act

See section 2.3 *Administrative boundaries – State, local government, and locality*, page 5.
See section 3.5 *Adjoining information*, page 13.
See section 9.46 *State boundary*, page 149.
See the *Queensland Boundaries Declaratory Act 1982*.
See *Redefining the Queensland – New South Wales border: guidelines for surveyors*,
<www.resources.qld.gov.au/__data/assets/pdf_file/0020/105743/redefining-queensland-nsw-border.pdf>**.**

All surveys in areas adjoining the Queensland State border must be undertaken in collaboration with the organisation responsible for surveying in the adjoining State/Territory.

Where a survey is adjacent to the Queensland State border, including where the State border is located in the middle or other side of an adjoining feature, such as a road or watercourse, the department must be contacted for survey advice and coordination of the survey activity with the adjoining jurisdiction. Additionally, the State border itself must be shown and labelled on the plan of survey and where practicable, connections should be made to the cadastre in the adjoining jurisdiction.

A copy of the completed plan of survey must be forwarded to the department to distribute to the adjoining jurisdiction. The department will arrange for the plan to be approved by the Director of Surveys in Queensland and the Surveyor-General in the adjoining jurisdiction prior to being returned to the surveyor for depositing.

Information on sovereignty and maritime boundaries between Australia and the former Independent State of Papua New Guinea can be found within the *Torres Strait Fisheries Act 1984* (Cth), wherein the Torres Strait Treaty is repeated in the schedule.

5.5 Canals

Standard under the Land Title Act

See section 9.9 *Canals*, page 125.

Canals are created under the *Coastal Protection and Management Act 1995*. There are transitional arrangements under the *Coastal Protection and Management Act 1995* to deal with canals that were created under the repealed *Canals Act 1958*:

- If development approval for the creation of a canal has been granted prior to 20 October 2003, subsequent endorsement of the plan with respect to the canal is carried out under transitional arrangements by *Beach Protection Authority*.
    - The lot is given a lot number and described as '(CANAL)'.
- If development approval is granted subsequent to 20 October 2003 for the creation of a canal, access channel, or artificial waterway, such approval would be granted by the local government acting as assessment manager under the *Planning Act 2016*.
    - In Item 2 on the survey plan, additional words are required to be endorsed by the local government:

        XXX Local Government certifies that the waterway shown on this plan, and any access channel associated with the waterway, is constructed in accordance with the development approval for the waterway and/or if the waterway is not a canal, satisfactory arrangements have been made, or will be made, for the maintenance and management of the waterway.

        S119(2)(a) Coastal Protection and Management Act 1995

        S119(2)(b) Coastal Protection and Management Act 1995

        Signed and sealed by XXX Local Government

    - Subsequent approval of the plan is carried out by the local government.
    - The lot is given a lot number and described as '(CANAL)' or '(ACCESS CHANNEL)' or '(ARTIFICIAL WATERWAY)' as appropriate.
    - On subsequent plans, these lots are described with the lot/plan description where it can be determined through a search of survey plans and adjoins the subject land, and the word '(CANAL)' or '(ACCESS CHANNEL)' or '(ARTIFICIAL WATERWAY)'as appropriate must be on the face of the plan.

5.5.1 Freehold land

Standard under the SMI Act

Under section 9(d) of the *Canals Act 1958*, canals can only be created by a plan, which is endorsed with the details of the relevant executive minute. The date that the clerk of the executive council signs the plan must follow the date of the local government approval. There is no time limit on the executive minute.

The canal must be transferred to the State. Registration of the plan will be delayed until the transfer to the State is also capable of registration.

If encumbrances exist, these must be surrendered before the transfer to the State.

5.5.2 State land

Standard under the SMI Act

For canals created on State land development leases, show the word 'CANAL' as appropriate.

5.6 Catchment areas

Information

See section 11.4 *Declared catchment areas*, page 161.

Section 258 of the *Water Act 2000* allows a regulation to declare a catchment area. Catchment areas are defined in Schedule 5 of the Water Regulation 2002. They are described on Administrative plans (APs).

5.7 Channel/drain areas

Information

See section 9.16 *Channel/drain*, page 136.

Unless the plan is signed by the Director-General of the department, or their delegate, as registered owner, the plan must be endorsed by the Director-General of the department to precede local government consent and a transfer to the State must be lodged. There is no time limit on the approval of the Director-General of the department.

5.8 Easements

Information

See the *Land Title Practice Manual (Queensland)*, clause 21-2080.
See the *Registrar of Titles directions for the preparation of plans*, Direction 6.7 'Easements and local government consent'.

The creation of an easement giving access to a lot from a constructed road is the reconfiguring of a lot under the *Planning Act 2016*. Section 83(2) of the *Land Title Act 1994* requires any plan of survey referred to in an instrument of easement for access to a lot from a constructed road, to be approved by the relevant planning body when lodged.

The term 'constructed' in section 83(2) of the *Land Title Act 1994* is to be taken to mean a dedicated road according to the Land Title Practice Manual.

5.9 Forest entitlement areas (FEAs)

Information

See section 2.9 *Reservations in title*, page 6.
See section 3.6.4 *Multiple line areas*, page 15.
See section 9.23 *Forest entitlement areas (FEAs)*, page 139.
See sections 26B and 26C of the Land Act 1994.

Forest entitlement areas (FEAs) were first introduced into the *Land Act 1962* in 1974 in order that the State may manage areas for the production of indigenous timber and associated products in perpetuity. FEAs applied to leases under the Land Act that could be converted to a freeholding tenure such as GHPL and GHFL. (See 'Glossary' for a definition of forest entitlement areas.)

When first introduced, the leases were issued over the gross area of the lease without any adjustment for the FEA reservation. This occurred since in most cases there were no surveyed dimensions available for the FEA and areas were not known with any degree of certainty.

While FEAs appear on plans held by the department and show calculated areas they are not cadastral surveys in terms of the *Survey and Mapping Infrastructure Act 2003*. In general, FEAs were surveyed by persons who are not endorsed to perform cadastral surveys.

Standard under the SMI Act

State leases that are subject to an FEA must show the FEA as a reservation in title. If the FEA is surveyed, the extent of the FEA must be shown on the face of the plan in hairline. The area of the lot must show a multiple line with an exclusion for the FEA.

If the State has not taken possession of the land that is covered by the FEA under the *Acquisition of Land*

Act 1967, a deed of grant is issued with the FEA as a reservation in the grant. Alternatively, if the State is to take possession of the land covered by the FEA at the time of freeholding, a survey plan may be required to correctly define that land to be become freehold and the land that is to be held by the State.

Guideline under Standard 5.9 Forest entitlement areas

Since an FEA is a reservation in title no dedicated access to the FEA is required.

5.10 Forest consent area

Information

See section 3.30 *Profit a prendre*, page 52.
See sections 61JA and 61JB of the Forestry Act 1959.

A forest consent area is an area identified in a forest consent agreement for the use and management of forest products, similar to forest entitlement areas. However, a forest consent agreement will be registered as a profit a prendre. Any survey for a forest consent area will be in accordance with section 3.30 *Profit a prendre*.

5.11 Future conservation areas

Standard under the SMI Act

Future conservation areas (FCA) are a reservation in a grant that are in a fixed position. The FCA may be surveyed or not surveyed. Where a grant is subject to a reservation for an FCA and that land is being dealt with, the survey plan for that land must show the FCA.

State leases that are subject to an FCA must show the FCA as a reservation in title. The area of the FCA must be shown on the face of the plan in broken hairline. If the FCA is to be surveyed it must be surveyed to the same status as the surveyed status of the underlying land. All FCA's must be identified with a numeric identifier e.g. FCA1.

5.12 Leases

Information

See the *Land Title Practice Manual (Queensland)*, clause 7-0050.

For leases under the *Land Title Act 1994*, local government approval is required, if options and term exceed 10 years. The lease document requires approval. The plan does not require approval.

For any leases in leasehold land, including reserves, State forests, and national parks, the approval of the Minister is required and the local departmental office should be contacted. Refer to Chapter 6, Part 4, Division 3, of the *Land Act 1994*.

Note: Leases in lots under the *Building Units and Group Titles Act 1980*, may require local government approval if the land is part of a development under one of the specified Acts. See section 8(2)(b) of that Act. Section 326 of the *Body Corporate and Community Management Act 1997* defines a specified Act as:

(a) the *Integrated Resort Development Act 1987*; or

(b) the *Mixed Use Development Act 1993*; or

(c) the *Registration of Plans (H.S.P. (Nominees) Pty. Limited) Enabling Act 1980*; or

(d) the *Registration of Plans (Stage 2) (H.S.P. (Nominees) Pty. Limited) Enabling Act 1984*; or

(e) the *Sanctuary Cove Resort Act 1985*.

5.13 Local government boundary

Information

See section 3.11.5 *Compiled plan of large unsurveyed parcel*, page 27.

If land represented on a plan falls within more than one local government, the approval of each local government is required.

5.14 Local government approval

Information

Local government approval is required for all plans of subdivision of freehold land whether by compilation or survey, **except:**

- plans for those actions which the *Planning Act 2016* and the Planning Regulation 2017 identify as being exempt from compliance assessment
- subdivisions under the *Property Law Act 1974*, Part XI, section 185 (1)(b), 'Order of Supreme Court for relief in respect of encroachment'
- plans of amalgamation (section 50(h) of the *Land Title Act 1994*)
- easement (other than easement of access to a lot from a constructed road, see note below), covenant, lease, profit a prendre plans (not a subdivision as per section 49 of the *Land Title Act 1994),* and carbon abatement interest. However, section 83(2) of the *Land Title Act 1994* requires plans of easements creating access from a lot to a constructed road be approved by the relevant planning body. See section 5.8 *Easements*.
- plans of resurvey only (section 50(h) of the *Land Title Act 1994)*

The responsibility for ensuring that the survey plan is correct at the time of presentation to the local government rests with the surveyor. Plans must be lodged in the land registry within six (6) months of relevant planning body approval or a fresh approval obtained, section 50(5) of the Land Title Act.

Withdrawal and relodgement under sections 53 and 159(6) of the *Land Title Act 1994* does not affect the lodgement date for local government approval. See section 2.11 *Withdrawal and relodgement of plans*.

5.15 Local government conditional consent

Information

See section 5.2 *Amalgamations*, page 92.

Under the *Planning Act 2016* there is no legislative provision that allows for conditions to be included in the local government approval on the plan. The provisions of section 97A of the *Land Title Act 1994* may be utilised by local government to register a condition that lots may not be transferred separately.

However, conditional consents may exist on a previously registered plan or on the title of a lot and may need to be addressed if the lot is affected by survey.

5.15.1 Consent shown on plan only

Information

See section 3.36 *Resurveys*, page 64.

Where multiple parcels of land are compulsorily held in one title by virtue of a condition in a local government consent on a plan only, separate titles may be issued if the appropriate local government grants approval to the removal of the conditional consent and submits this decision in writing to the Registrar of Titles.

Prior to 1948 there was no legislative authority for local governments to conditionally consent to a plan of subdivision. The *Local Government Act 1936* was amended in 1948 to add section 34A(3) (12 Geo.VI No 49, 1948, assented to and commenced 9 December 1948), and provide this authority. Accordingly, conditions placed on plans prior to 1948 are invalid. A common noting on these plans was 'lots to be held in the one ownership'.

Where an application is received for separate titles to lots over a plan that bears a notation of this nature, the Registrar of Titles will, prior to issuing separate titles:

- issue titles with no further action on plans with the consent prior to 9 December 1948,

- require local government consent on plans after 1948. As a minimum, the council will have to provide their consent in writing on paper that contains their letterhead.

The plan will be noted that the conditional consent no longer applies.

5.15.2 Consents registered on title

Information

See the *Land Title Practice Manual (Queensland)*, clause 21-2200, 'Agreement under the Local Government (Planning and Environment) Act 1990 or the Local Government Act 1936'.

A conditional consent under section 5.8 (3) or section 4.17 of the now repealed *Local Government (Planning and Environment) Act 1990* is registered on the title. This consent may be varied in whole or in part. See the *Land Title Practice Manual (Queensland)*.

5.15.3 Consent affected by survey

Standard under the Land Title Act

See the *Land Title Practice Manual (Queensland)*, clause 21-2200 Agreement under the Local Government (Planning and Environment) Act 1990 or the Local Government Act 1936'.

Conditions (either on the plan or on the title) in a prior local government consent must be waived or varied when **one** of the parcels being the subject of the condition is being subdivided.

There are two options, namely:

- local government must vary or remove its condition by the lodgement of appropriate documents with the Registrar of Titles
- the survey must satisfy the condition.

5.16 State development leases

Information

Surveys for state development leases should conform with the usual local government subdivision requirements (see the approval conditions of development lease) but are endorsed by the local departmental delegate prior to the plan being lodged in the Titles Registry.

5.17 State land actions

Information

See section 7.6.5 *State forests*, page 109.
See section 9.2 *Action statements*, page 119.

Actions such as road closures, subdivision of, easements in, or other actions on, State leasehold land or any other plan dealing with State land are dealt with under the provisions of the *Land Act 1994*. A formal application is required to be made to the department for any action under the *Land Act 1994*. The department will investigate the matter and provide a formal response to the applicant. If the application is approved, the department's letter of offer will detail any actions required, the applicable sections of the *Land Act 1994*, and other general departmental processes relevant to the application.

Plans in this category all require the consent of the Minister, and are then subsequently lodged in the Titles Registry for completion of the necessary action. Your attention is drawn to section 299A of the *Land Act 1994* regarding the non-registration of documents. It is recommended that any required survey not be carried out until written approval of the proposal is received. It is the responsibility of the surveyor to ensure any plan is suitable for the action, and is in agreement with the department's letter of offer. Where the surveyor is unclear or uncertain of the requirements, the surveyor should contact the writer of the letter and/or the local departmental principal surveyor for clarification. Any changes should be discussed, and approved, prior to finalising the plan.

Plans for which the department is simply a depository (not an action under the *Land Act 1994*) include plans prepared under the *Harbours Act 1955*, Port of Brisbane leases, etc.

A plan completing a State land action must identify the eLVAS file reference in the departmental file reference item on the plan administration sheet (Form 21B).

6 Easements

6.1 Definition

Information

See section 9.18.2 *Secondary interest*, page 136.
See section 9.28 *Linework*, page 141.
See the *Land Title Practice Manual (Queensland)*, Part 9.
See the *Registrar of Titles Directions for the Preparation of Plans*, Part 6 'Easements'.

From the *Land Title Practice Manual (Queensland)*, Part 9:

> *'An easement is a right annexed to land to utilise other land in a particular manner. It does not involve the taking of any part of natural produce of the land or any part of its soil. It may, however, prevent the owner of the other land from utilising his/her land in a particular manner (Halsbury's Laws of England (4th edn, 1975) Volume 14, page 4).*
>
> *An example of an easement is where one owner (of the "burdened lot") allows another owner (of the "benefited lot') to pass over his/her land.*
>
> *The land advantaged by the easement is called the "benefited lot" or "dominant tenement". The land over which the easement is granted is called the "burdened lot" or "servient tenement". The benefit of an easement runs with the benefited lot, i.e. it passes from one owner to the next, and the burden of the easement runs with the burdened lot. Therefore, all future owners of the burdened lot are bound by the easement, unless it is surrendered or extinguished.*
>
> *Generally, for an easement to exist there must be a benefited and a burdened lot. The exception to this is the case of an "easement in gross" (where there is a burdened lot only) to serve the purposes of local government or a government instrumentality.*
>
> *An easement (other than an easement in gross) must accommodate the benefited lot and contribute to the full enjoyment of the benefited lot.*
>
> *Re Ellenborough Park [1956] 1 Ch 131 is the landmark case which established the essential characteristics of an easement, which are:*
>
> *(a) There must be a benefited lot and a burdened lot.*
>
> *(b) An easement must 'accommodate' the benefited lot.*
>
> *(c) Benefited and burdened lot owners must be different persons.*
>
> *(d) A right over land cannot amount to an easement unless it is capable of forming the subject matter of a grant.*
>
> ***Note:***
>
> *(i) As previously mentioned, easements in gross are not required to exhibit the characteristics in (a) and (b) above.*
>
> *(ii) Section 86 of the Land Title Act 1994 and s.367 of the Land Act 1994 allow easements to be granted if the benefited and burdened lot are owned by the same person.*
>
> *It is sometimes a matter of great difficulty to determine whether a particular 'right' is capable of forming the subject matter of a grant. Some examples will demonstrate this:*
>
> - *an easement over the whole of the land is capable of forming the subject matter of a grant;*
> - *but it cannot rob the owner of the servient tenement of the reasonable use of their land (Weigall v Toman [2008] 1 Qd R 192);*
> - *a right to provide a wind break is capable of forming the subject matter of a grant (Ford v Heathwood [1946] QWN 11);*
> - *but a right to privacy is not (Brown v Flower [1911] 1 Ch 219).*
>
> *Many other examples could be given of these difficulties.*
>
> *A further difficulty arises in attempting to distinguish easements from other rights.'*

6.2 Cane railway easements

Standard under the SMI Act

See Appendix A *Deemed tramway easements*, page 168.
See the *Sugar Industry Act 1999.*

The *Sugar Industry Act 1999* provides for the grant of two types of access right, a 'permit to pass' or a 'cane railway easement'. These types of access rights are not ordinarily registered against a title in the land registry, see section 71 of the *Sugar Industry Act 1999*. Instead an administrative advice is recorded in the relevant register under the *Land Act 1994* or *Land Title Act 1994*.

Sections 81A and 89 of the *Land Title Act 1994* also provide for a cane railway easement to be registered as an easement in gross to a public utility provider, being a mill owner. For new cane railway easement registered as a public utility easement under the *Land Title Act 1994*, a survey plan is required meeting the standard requirements for easements.

Similar access rights were formerly referred to as deemed tramway easements. All existing deemed tramway easements have been recorded as an administrative advice under the *Land Title Act 1994*. Administrative advice for a sugar access right (such as a deemed tramway easement, a permit to pass or cane railway easement under the provision of the *Sugar Industry Act 1999*) must be spatially allocated if the land is subdivided.

Some existing tramways are registered easements under the *Land Title Act 1994*. Where the land that is subject to the easement is to be reconfigured, the extent of the easement needs to be determined. If no plan of the easement is available, the centreline of the tramline track should be located relative to the lot boundaries. There is no requirement to mark the easement boundaries or their intersection with the lot boundaries. Recovery marks should be placed near the intersection of the centreline with the lot boundaries as well as at the tangent points and traverse points on curves. The plan must show the dimensions of straights and chords, the radii of curves, areas of the easement and the recovery marks placed.

6.3 Creation of easements

Standard under the SMI Act

Easements, whether in freehold or non-freehold land, may be standard, restricted or volumetric.

Easements that do not cover the whole of the vertical extent of the lot are considered to be 'restricted'. See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 6.5 'Easements limited vertically'.

Where an easement is to be created that affects multiple lots or separate parts of the same lot, a separate easement is required for each lot or part lot. See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 6.3 'Easements in parts'.

Overlapping easements are permitted. Other existing registered easements should be shown if they are located adjacent to the new easement.

An acceptable severance closure between the easement and lot boundaries in accordance with section 3.4.2 *Measurement accuracy*, is required. Where a satisfactory close cannot be obtained, sufficient check measurements should be shown in the survey records to ensure the integrity of the surveyor's own work. The requirement under section 3.18 *Dimensions* to have sufficient connections to reinstate the parcel (i.e. the easement) from the corners of the parent lot still applies.

The parcel over which the easement is to be created does not need to be fully shown or dimensioned. However, sufficient information must be shown to enable the easement to be accurately located within the parcel.

6.3.1 Purpose of easement

Standard under the SMI Act

By direction of the Registrar of Titles, the purpose of an easement is not to be shown on the face of the plan. The easement document creates the easement and identifies the purpose. This requirement applies to any easement plan lodged in the Titles Registry.

6.3.2 Standard easements

Guideline under Standard 6.3 Creation of easements

A standard easement covers the whole of the vertical extent of the parent lot that the easement refers to.

6.3.3 Restricted easement

Information

See the *Registrar of Titles Directions for the Preparation of Plans*, Part 6 'Easements'.

A restricted easement does not cover the whole of the vertical extent of the lot and is restricted by single continuous horizontal plane in either height or depth or both.

6.3.4 Volumetric easement

Standard under the SMI Act

See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 10.2 'Volumetric format plans - General'.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 10.6 'Volumetric easements'.

A volumetric easement must be bounded in all dimensions. A volumetric format easement does not cover the whole of the vertical extent of the lot and may not be bounded by a single continuous horizontal plane in either height or depth.

6.4 Freehold easements

Standard under the Land Title Act

See section 9.18.2.2 *Use of 'proposed'*, page 137.
See section 11.6 *Easement with titles issued*, page 161.
See the *Land Title Practice Manual (Queensland)*, clause 9-2020.
See the *Registrar of Titles Directions for the Preparation of Plans*, Part 6 'Easements'.
See the *Registrar of Titles Directions for the Preparation of Plans*, Part 22 'Allocations'.

Easements may be created over undescribed balances.

A plan of survey may describe an easement as a 'proposed easement' whether or not the instrument creating the easement interest is lodged immediately following the plan. Where the easement instrument is not lodged with the plan, the plan must describe the easement as a 'proposed easement'.

6.4.1 Easements over land shown as public use land

See section 3.31 *Public use land*, page 54.

Standard under the Land Act

Only existing registered easements for public utility purposes are able to remain over land shown as public use land on a survey plan, provided that the Minister's approval has been provided prior to the lodgement of the plan, in accordance with section 372 of the *Land Act 1994*. If the easement is **not** to be continued on the public use land, it is not to be plotted on the face of the plan—see the *Land Title Practice Manual (Queensland)*, clause 21-2280. No easements are able to remain over land dedicated as road.

Two alternatives are available for the creation of easements over land to be shown as public use land on a survey plan:

- prior to surrender
- after the surrender.

6.4.1.1 Creation prior to surrender

Where new easements for public utility purposes are required over land shown as public use land that is to be surrendered to the State on registration of a plan, the easements may be registered prior to the registration of the plan. Once registered, the easements may be dealt with as noted in section 372 of the *Land Act 1994*.

6.4.1.2 Creation following the surrender

Where a new easement is required over land shown as public use land that is to be surrendered to the State on registration of a plan, the easement may be defined on the plan as 'proposed easement'. After the plan is registered, the instrument of easement, duly executed by the delegate of the Minister, is lodged and registered.

Following registration of a plan of subdivision showing public use land, or following the surrender of a lot to the State, any easements that have not been shown on a previous plan as 'proposed easement' must be created on a State land action plan.

6.5 Non-freehold easements

Standard under the Land Act

See Chapter 6 Part 4 Division 8 *Land Act 1994*.

In terms of section 362 of the *Land Act 1994*, easements may be created over non-freehold land, other than road, with the written approval of the Minister.

The use of 'proposed' for the State land action plans is the same as that for freehold land.

All easements over State land must be registered in the land registry. All plans of this nature (State land) will require approval by the delegate of the Minister **prior** to lodgement.

To obtain Ministerial consent for an easement, a draft of the easement document must be lodged with the department. The Minister's consent for easements **must** be provided to the applicant on a Titles Registry Form 18 ('General consent') with any additional conditions of the Minister's consent provided on a Titles Registry Form 20 (enlarged panel).

An easement over land granted in trust, a lease or a licence ends when the deed of grant in trust, lease or licence ends, except if the easement is a public utility easement which may continue over USL with the Minister's approval. With the Minister's approval under section 372 of the *Land Act 1994*, a public utility easement that burdens a State lease over a reserve may continue over the reserve when the State lease ends.

6.5.1 Easements over reserves and unallocated State land

Standard under the Land Act

See section 3.35.7 *Resumptions from non-freehold land*, page 63.
See departmental policy *Easement SLM/2013/410*,
<www.resources.qld.gov.au/?a=109113:policy_registry/easement.pdf>.

The State is the owner of reserves or parts of reserves, which are not subject to a term lease, and therefore the grantor of such easements.

Easements may be created over any reserve under the provisions of the *Land Act 1994*. However, there are no provisions in legislation that allow for the resumption for easement purposes over a reserve under the *Land Act 1994*.

Where a reserve under the *Land Act 1994* has an easement registered against it, and a lease under the *Land Act 1994* has been applied for, and that lease affects the existing easement, it is a requirement that the applicant arrange for the creation of a new easement over the new lease and for the subsequent surrender of that part of the existing easement covered by the lease.

Conversely, when establishing an easement over a reserve that contains an existing State lease and that lease will be affected by the easement, it may be necessary to create separate easements for both the reserve and the lease. In such cases the department should be contacted for advice via the senior land officer, in the local departmental office. See Appendix G for the relevant email address of each departmental office.

When a reserve burdened by an easement is revoked, the easement must be resumed or surrendered, except if the easement is a public utility easement which may continue over USL with the Minister's approval.

6.5.2 Easements in leases over reserves for State forest or national park

Standard under the SMI Act

As State forests and national parks are not reserves under the provisions of the *Land Act 1994*, easements cannot be created by resumption or agreement, **except** for easements in a State forest under the provisions of section 116A of the *Electricity Act 1994* and section 437A of the *Petroleum and Gas (Production and Safety) Act 2004*. These easements are arranged by the department, but are subject to the same provisions as other public utility easements.

However, where a lease issued under the provisions of the *Land Act 1994* exists over any reserve, including State forest or park and recreation, etc., in very limited circumstances an easement may be created within the lease. An easement may be resumed from the lease. The easement is extinguished at the expiration of the term of the lease. Note that a public utility easement that burdens a State lease over a reserve may continue over the reserve when the State lease ends.

The easement must be described as:

> *Easement <alpha> in Lot <alpha> on <plan that created the lease>*

6.6 Partial surrender of easement

Standard under the SMI Act

The following is an extract from Part 10—Surrender of easement, *Land Title Practice Manual (Queensland)*, clause 10-2000:

> *'If the easement is to be only partly surrendered, the surrendered portion must be capable of precise definition. If the surrendered portion is not capable of precise definition, the area to be surrendered, or the area to remain in the easement, must be defined by a plan of survey drawn in accordance with direction 6 of the Registrar of Titles Directions for the Preparation of Plans[10]. Alternatively the easement should be fully surrendered and a new easement created.'*

The use of sketch plans is not acceptable.

Some examples of 'precise definition' are:

> *All that part of Easement A in Lot 7 on SP123456*
>
> *Proposed Easement X on SP123456*

The use of an identification plan for the 'precise definition' is not acceptable. If a plan is required, it must be a plan of survey lodged in the Titles Registry. Plan of survey is defined in Part 4 Division 2A of the *Land Title Act 1994.*

[10] <www.titlesqld.com.au/wp-content/uploads/2023/11/Registrars-Directions-for-Preparation-of-Plans-2023.pdf>

6.7 Specific actions

6.7.1 Easements by resumption

Information

See section 3.35 *Resumption actions*, page 60.
See Chapter 5, Part 3, Division 1 of the *Land Act 1994*.

6.7.2 Easements over the whole of a lot

Information

See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 6.6 'Easement as adjoining information'

6.7.3 Road dedications over easements in all tenures

Standard under the Land Act

See section 10.2.1 *Creation of roads in freehold land*, page 154.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 22.6.5 'Easements absorbed in new road'.

The dedication of road extinguishes all interests in that land, including any easements. Where a road is dedicated over a registered easement (other than a right-of-way easement or an easement for local government purposes to the local government consenting to the plan) by plan or by document, the consent of the grantee of the easement is required. The grantees consent is not required for dedication of a road over an access or a right-of-way easement, including a public thoroughfare easement, as the benefit is superseded by the road.

There are four possible situations for road dedications over easements. These are:

- where the grantee (other than the grantee of an access or a right-of-way easement) is the owner or lessee of another lot, their approval should be on a consent form (Form 18, *Land Title Act 1994*)
- where the grantee is a public utility, their approval should be on a consent form (Form 18, *Land Title Act 1994*)
- where the grantee is a local government but the easement lies in another local government area the grantee local government approval should be on a consent form (Form 18, *Land Title Act 1994*) and the approval should be under seal
- where the grantee is a local government and the easement lies within that local government's area, the local government's consent to the plan is sufficient approval.

7 Leases

7.1 Application of this section

Information

This section refers to leases under the provisions of Part 6, Division 2 of the *Land Title Act 1994* and to subleases under the provisions of Chapter 6, Part 4, Division 3 of the *Land Act 1994* only. Term leases under the provisions of Chapter 4, Part 3 of the *Land Act 1994* are a primary tenure and are not covered in this section.

7.2 Definition: freehold land

Information

The *Land Title Practice Manual (Queensland)*, at clause 7-0000, defines a freehold lease as follows:

> *'A lease is a contract between a lessor and a lessee whereby the lessor as registered proprietor grants to the lessee an estate or interest in land for a fixed term in consideration of the lessee paying rent. The lessee holds the leasehold estate during the term of the lease and the lessor holds the reversion, being the lessor's estate in the land subject to the lease. The leasehold estate is an asset of the lessee and may be assigned during the lessee's lifetime or upon his/her death.*
>
> *The lessee acquires exclusive possession of:*
>
> - *all or part of a lot as defined in s.4 of the Land Title Act 1994; or*
> - *all of a water allocation as defined in the Water Act 2000.*
>
> *The building or land being leased is called 'the demised premises'.*
>
> *Section 64 of the Land Title Act 1994 authorises registration of a lease or sub-lease over the whole or part of a lot. A lease may therefore cover:*
>
> - *the whole of a lot;*
> - *part of a lot;*
> - *the whole of a building erected on a lot;*
> - *part of a building erected on a lot;*
> - *the whole of a lot in a building units plan or group titles plan;*
> - *part of a lot or the common property in a building units plan or group titles plan;*
> - *part of the common property in a community titles scheme.*
>
> *A lease does not require registration to be valid (s 71 of the Land Title Act 1994),*
>
> *However, if the initial term exceeds three years it must be registered to achieve indefeasibility (ss.184 and 185(1)(b) of the Land Title Act 1994).'*

In many respects, leases in State land are similar to leases in freehold land except that the Minister's approval is required before the lease may be registered. In State land, secondary interests are called 'subleases'. (See Chapter 6, Part 4, Division 3 of the *Land Act 1994).* A sublease may cover:

- the whole of a lot
- part of a lot.

7.3 Lease types

7.3.1 Whole of the land

Standard under the SMI Act

Where a lease is to be registered over the whole of a lot, the lease is not to be described on a survey plan.

If a lease covers the whole of the lot, and it is desired to restrict it vertically, it must be dealt with as per section 7.3.9, *Volumetric leases*.

7.3.2 Leases for part of the land only

Standard under the SMI Act

7.3.2.1 Freehold

See section 7.3.9 *Volumetric leases*, page 107.
See the *Land Title Practice Manual (Queensland)*, Part 7.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 5.2 'Leases'.

The Registrar's directions set out the requirements for plans of leases of freehold land.

7.3.2.2 Leasehold

See section 335 of the *Land Act 1994*.

A lease of part of the land under the *Land Act 1994* (subleases) requires the approval of the Minister. Section 335 of the *Land Act 1994* states that a sketch may be lodged. However, as the lease is to be registered in the land registry, the Registrar of Titles requirement for a common plan form may take precedence. Reference to the 'approval letter' or the local departmental office should confirm the survey requirement prior to the survey.

Any long-term sublease (e.g. condominium and villa leases) is required to be surveyed (e.g. SP125981, SP131569). These plans do not conform to normal practice and the consent of the Registrar of Titles should be sought in the first instance if a similar plan is contemplated.

7.3.3 Leases for part of the building only

7.3.3.1 Freehold

Standard under the Land Title Act

See section 65 of the *Land Title Act 1994*.
See the *Land Title Practice Manual (Queensland)*, clauses 7-2205 to 7-2370.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 5.3 'Sketch plans for leases within a building'.

Part of a building on a lot must be sufficiently identified either by means of a description satisfactory to the Registrar of Titles, or a sketch which conforms to the standard required by the Registrar of Titles.

7.3.3.2 Leasehold

Information

In general, subleases under the *Land Act 1994* for part of a building are treated as a lease of part of the land.

7.3.4 Leases for the whole of a building

Information

7.3.4.1 Freehold

See section 65 of the *Land Title Act 1994*.

7.3.4.2 Leasehold

In general, subleases under the *Land Act 1994* for the whole of a building are treated as a lease of part of the land.

7.3.5 Lease for the whole of a lot on a building format plan or group titles plan

Information

No plan is required (See section 7.3.1 *Whole of the land*).

7.3.6 Lease for part of the common property in a community titles scheme

Information

If the lease in common property is not within a building, see section 7.3.2 *Leases for part of the land only*.

If the lease is wholly within a building, see section 7.3.3, *Leases for part of the building only*.

7.3.7 Lease for part of land and part of building

Standard under the Land Title Act

See the *Land Title Practice Manual (Queensland)*, clause 7-2205.

The preferred option is to have a lease sketch for the 'part of the building', conforming to section 7.3.3 *Leases for part of the building only*, and a lease plan for the 'part of the land' conforming to section 7.3.2 *Leases for part of the land only*.

Another option would be to have the 'part of the building' lease, prepared as a volumetric lease, conforming to section 7.3.9 *Volumetric leases*. This would entail two survey plans, one a standard format plan (for the part of land), the other a volumetric format plan (for the part of building).

7.3.8 A lease covering more than one lot

Standard under the Land Title Act

A lease over multiple lots is unacceptable (see the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.8.3 'Secondary Parcels', except for a lease within a building over multiple lots (see section 5.1 of that document).

7.3.9 Volumetric leases

Standard under the Land Title Act

See section 7.3.1 *Whole of the land*, page 106.

A lease within a volumetric lot that covers the whole of the vertical extent of that lot is not a volumetric lease.

It is treated as a lease within a standard format lot.

Leases that are restricted in vertical extent are volumetric leases and must conform to the *Registrar of Titles Directions for the Preparation of Plans*, Direction *10.7* 'Volumetric leases'.

7.4 Description of leases

Standard under the Land Title Act

See section 3.17 *Description of parcels*, page 31.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.8 'Parcels to be described'.

The description conforms to that for secondary interests, and the *Queensland Parcel Identification Standard SIG/2013/396*, <www.resources.qld.gov.au/?a=109113:policy_registry/parcel-identification_standard.pdf> and the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.8.3 'Secondary Parcels'.

7.5 Subleases

Standard under the Land Act

Standard under the Land Title Act

See the *Land Title Practice Manual (Queensland)*, clause 7-2170.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 5.8 'Sub Leases of a lease under the Land Act 1994'.

For the preparation of a plan, a sublease is treated in the same manner as another new lease in the lot. Documentation lodged with the plan will clarify that the lease is a sublease. This applies to leases under the provisions of the *Land Title Act 1994* and the *Land Act 1994.*

7.6 Specific estates

See section 3.17 *Description of parcels*, page 31.

7.6.1 Deed of grant in trust

Standard under the Land Act

See section 7.3.2 *Leases for part of the land only*, page 106.

A deed of grant in trust (DOGIT) is a freehold estate held in trust for a particular purpose. The empowerment and enabling legislation for the creation of leases within deeds of grant in trust is contained in the document that creates the estate. The legislation creating the estate will determine the type of plan and the approval required.

Section 57 of the *Land Act 1994* applies to the ministerial consent required before the lease can be registered under the provisions of the *Land Title Act 1994*. In all other respects it is a lease in freehold land.

7.6.2 National parks

Information

See section 124 of the *Land Act 1994*.

Note: When excising from National Park, the plan should only cancel that part of the National Park being excised. The balance of the National Park is dealt with separately by later actions. If the excision affects an existing secondary lease (e.g. term lease) a new plan is required to re-dimension the existing lease. It is suggested that the plan of the lease uses a new alpha descriptor, and not repeat the existing one.

Secondary tenure leases over part of the land in national parks require approval by the relevant authorities and the local departmental office should be contacted. The approval letter will specify survey requirements, which is usually the lodgement of a standard format plan.

7.6.3 Vested land

Information

Refer to section 393(4) of the *Land Act 1994* and section 288(1) of the *Transport Infrastructure Act 1994*.

Dealings in vested land (e.g. ports) may be extremely complex and contact should be made with the local departmental principal surveyor in the first instance.

7.6.4 Reserves

Standard under the Land Act

See sections 32, 57 and 59, and Chapter 6, Part 4, Division 3 of the *Land Act 1994*.

A lease over a reserve or part of a reserve requires the approval of the Minister, and is a lease between the State and the lessee as defined in the definitions of the lease. A sublease of such a lease would also require the approval of the Minister and be a sublease in terms of section 335 of the *Land Act 1994*. Written authority has been given to the State or local government as trustee of trust land under section 64 of the *Land Act 1994* to dispense with the need to obtain Ministerial approval for a trustee lease on the following conditions:

- The trustee lease is consistent with the purpose of the trust land; and
- The lease complies with the requirements under section 7(2) of the Land Regulation 2020; and
- The lease is shown as subject to Mandatory Standards Terms Document number 711932933; and
- A copy of the Written Authority forms part of the trustee lease documents lodged for registration.

For a trustee lease over a reserve the plan format requirement is at the discretion of the chief executive of the department that administers the *Land Act 1994*.

Reference should be made to the letter of offer, or the local departmental office to determine the lease being offered unless the State or local government is using their authority as above.

7.6.5 State forests

Standard under the Land Act

See section 3.17 *Description of parcels*, page 31.
See section 5.17 *State land actions*, page 97.
See section 124 of the *Land Act 1994*.
See section 35(5) of the *Forestry Act 1959*.

Queensland Parks and Wildlife Service (QPWS) manages State forests in Queensland. Approval of QPWS is required in the first instance. Secondary tenure leases over part of the land in a State forest are approved by QPWS under the provisions section 35 (5) of the *Forestry Act 1959*. The local office of the department administers that approval and issues the lease under the provisions of the *Land Act 1994*.

Note.: When excising from State forest, the plan should only cancel part of the State forest. The balance is dealt with by later actions. If the excision affects an existing secondary lease (e.g. term lease) a new plan is required to re-dimension the existing lease. It is suggested that the plan of the lease uses a new alpha descriptor, and not repeat the existing one.

The plan should be presented on a standard plan form.

7.6.6 Reclaimed land

Standard under the SMI Act

See section 4.2 *Surveying tidal and non-tidal water boundaries*, page 76.
See section 5.17 *State land actions*, page 97.
See section 127 of the Land Act 1994.

Section 127 of the *Land Act 1994* refers to reclaimed land. The reclaimed land is USL, and under sections 14 and 15, the Governor-in-Council may grant a deed of grant or issue a lease over USL. If adding reclaimed land to an existing grant, the action is effected under section 358(f), and if to an existing lease, under section 360(f).

Survey requirements are no different to any other survey of USL for a deed to issue or a lease to issue. The boundaries of reclaimed land must be defined by right lines. Under section 127(4), if only part of the reclaimed land is being granted or leased, then a lot on plan description is required for the balance of the reclaimed area, so that it may be dealt with as a reserve or road.

8 Surveys using Global Navigation Satellite Systems (GNSS)

8.1 Scope of this guideline and reliance on ICSM SP1

Information

See ICSM *Standard for the Australian Survey Control Network (SP1 v2.2)* <*www.icsm.gov.au/publications/standard-australian-survey-control-network-special-publication-1-sp1*>.

This guideline builds on the concepts and methodologies outlined in Special Publication 1 (or SP1), which is the *Standard for the Australian Survey Control Network (SP1 v2.2)* published by the Australia and New Zealand Inter-Governmental Committee on Surveying and Mapping (ICSM). The SP1 *Guideline for Control Surveys by GNSS (SP1 v2.2)* also sets the framework for this guideline.

This guideline adopts the use of the terms *survey uncertainty*, *positional uncertainty* and *relative uncertainty* from SP1 as the framework for assessing and reporting the quality of GNSS measurements in cadastral surveys.

This guideline covers the same types of GNSS equipment covered by the SP1 GNSS Guideline; namely the use of survey quality GNSS equipment that measure precise code and carrier phase (i.e. dual frequency) measurements and can therefore typically deliver relative positions between GNSS antennas with centimetre level survey uncertainties. In terms of GNSS measurement techniques:

- This guideline covers the GNSS measurement techniques referred to in the SP1 GNSS guideline as *classic static* and *quick static* (the latter is also referred as *fast static* or *rapid static* by some GNSS equipment suppliers).
- This guideline extends beyond the current SP1 guideline to also cover the GNSS measurement techniques referred to in the SP1 GNSS guideline as real-time kinematic surveys using a single reference station (*single station RTK*) and real-time kinematic surveys using a network of continuously operating reference stations (*network RTK*)
- This guideline does not cover the GNSS measurement techniques referred to in the SP1 GNSS guideline as *single point position* and *differential GNSS*, which typically use low quality equipment and can only achieve survey uncertainties at the several metre level and several decimetre level respectively.

8.2 GNSS survey principles

Standard under the SMI Act

See section 3.4 *Accuracy*, page 12.
See section 3.19 *Easements—surveys of long line easements*, page 34.
See section 3.30 *Profit a prendre*, page 52.
See section 3.34 *Remote area surveys*, page 58.

GNSS technology can allow a measurement quality suitable for some cadastral survey activities. It is the responsibility of the surveyor to assess the suitability of GNSS for a particular activity in a given survey. If assessed to be suitable, then the use of GNSS must conform to the following principles:

- **GNSS measurement quality** – GNSS surveys must be designed to ensure that all possible sources of error are minimised to a level expected for the GNSS technique used;
- **GNSS measurement quality for cadastral surveys** – The survey uncertainties achieved from GNSS measurements must ensure that any possible outliers are detected and removed and that the relative uncertainty between adjacent cadastral survey marks does not exceed the vector accuracies specified in section 3.4.2 *Measurement accuracy*;
- **Measurement traceability** – GNSS measurements must conform to legal traceability requirements in line with the *Survey and Mapping Infrastructure Act 2003* and the *National Measurement Act 1960* (Cth);
- **Coordinates, heights, bearings and distances** – GNSS surveys must use and manage coordinates, heights, bearings and distances in a manner suitable for cadastral purposes;

- **Survey records** – GNSS surveys must allow lodgement and storage in the register of sufficient information to enable the survey to be correctly and unambiguously interpreted.

8.3 GNSS measurement quality

Guideline under Standard 8.2 GNSS survey principles

8.3.1 The nature of GNSS measurements

Measurements of angle and distance traditionally used in cadastral surveys are made across the landscape and directly between an instrument and a reflector. GNSS measurements have a number of significant differences:

- Signals generated by the satellites are measured by the surveyor's antenna and receiver;
- Measurements from each receiver are combined with each other and the satellite orbits to compute relative positions between the various antennas;
- Those relative positions can be expressed as bearings and distances but it is important to remember that those are derived quantities and not what is actually measured.

Given these factors, the quality of GNSS measurements are affected by a number of factors that are quite different to total stations. Those effects are outlined in the SP1 GNSS guideline as:

- GNSS system effects such as orbit error and satellite availability and geometry at each survey site;
- Atmospheric effects due to the ionosphere and troposphere;
- Site dependent effects such as obstructions to the signals, reflected signals (known as multipath and potentially causing decimetre errors) and interference from non-GNSS radio sources;
- Instrumental effects, most noticeably un-modelled antenna phase centre offsets.

8.3.2 Achieving expected GNSS measurement quality

The SP1 GNSS guideline outlines issues with equipment, observations techniques and processing procedures when using various techniques. While those guidelines are aimed at datum control surveys, the recommendations for achieving particular survey uncertainties can also be applied to cadastral surveys.

In choosing a suitable GNSS measurement technique for cadastral surveys, surveyors should consider the relevant issues in the SP1 GNSS guideline as well as manufacturer's guidelines for the equipment, software and GNSS technique being used. For cadastral surveys, particular attention should be paid to:

- **Minimising site dependent effects**. This is a major concern for cadastral surveys because measurements often need to be made close to buildings, fences or vegetation. If a cadastral corner is subject to multipath or obstructions, it may be necessary to make the GNSS measurements at reference marks that are free of such problems and connect to or place the cadastral corner using non-GNSS techniques. Excluding GNSS data below a certain elevation mask (e.g. below 15 degrees) and ensuring reasonable satellite geometry (based on Dilution of Precision [DOP] values) can also help to minimise site dependant effects;
- **Observing for sufficient time to minimise the effects outlined above and to achieve the required survey uncertainty**. Manufacturer's guidelines usually give suggestions for the observation time required for a given technique and taking into account number of available satellites and baseline length. If real-time kinematic (RTK) technique is chosen as a suitable method for the survey, it is strongly recommended that the occupation time at each mark allows recording of at least one minute of data following initialisation (also referred to as ambiguity resolution). It should also be noted that if the initialisation time is significantly longer than expected from the manufacturer's specifications, it could indicate problems with the GNSS data at that site and/or at that time;

- **Even with careful site selection and sufficient observation time, undetected outliers can still occur in GNSS surveying**. Where the only measurements to a mark are using GNSS then at least two occupations are required to ensure any outliers are detected. If the mark is subject to multi-path and/or obstructions, the occupations need to be separated by at least 30 minutes to allow sufficient change in the satellite constellation. In the case of RTK, it is desirable (but not mandatory) that the dual occupations use two different base station locations at different times to help isolate any base station errors. An alternative to dual GNSS occupations is to use non-GNSS techniques to check any single GNSS occupations;
- **Minimising non-GNSS effects.** Effects on the actual GNSS measurements are not the only potential source of error in GNSS surveying and external factors such as centring also come into play. For example, use a tripod and tribrach or a pole in a bipod rather than a hand-held pole.

8.4 GNSS measurement quality for cadastral surveys

Guideline under Standard 8.2 GNSS survey principles

8.4.1 Suitability of GNSS measurements for cadastral purposes

Section 3.4.2 *Measurement accuracy* sets out how to check cadastral survey accuracy. The most appropriate method for checking a GNSS survey is coordinate comparison between individual occupations of a cadastral mark and comparison with coordinated permanent survey marks.

8.4.2 Testing quality of Real-Time GNSS measurements and their suitability for cadastral purposes

In the case where GNSS is the only technique used at a given mark in a survey, it should be occupied at least twice. The most rigorous way to test the quality of GNSS measurements is using least squares adjustment. For detailed guidance see the SP1 *Guideline for the Adjustment and Evaluation of Survey Control* along with any instructions for the particular brand of adjustment software being used.

However, for real-time surveys, rather than using least squares adjustment, it is often desirable to test the quality of the GNSS measurements by comparison of the coordinates from two or more GNSS occupations of the same mark. That involves calculating the **expected** agreement between two occupations of a mark (given the equipment and technique used) and comparing that to the **actual** agreement between the two occupations.

Note that quality indicators displayed by the survey controller in the field use a Root Mean Squared Error (RMS or RMSE) and can often be overly optimistic because it is based more on internal measurement noise and can underestimate external effects, such as multipath (especially for short occupation times). Therefore, the manufacturer's specification for a given piece of equipment and technique should be used to compute the expected uncertainty of the measurements.

8.4.2.1 Classic Single Station (RTK)

The use of coordinate comparison and Survey Uncertainties is best explained using an example survey as shown in the figure below. The surveyor establishes a GNSS base receiver at reference station 1 and uses a GNSS rover receiver to occupy cadastral marks A and B. The Base receiver is then moved to Reference Station 2 and A and B are reoccupied. Therefore, for mark A, the first occupation measures baseline 1-A resulting in coordinates at A1 and the second occupation measures baseline 2-A resulting in coordinates at A2. Similarly, B1 and B2 represent the two occupations of mark B.

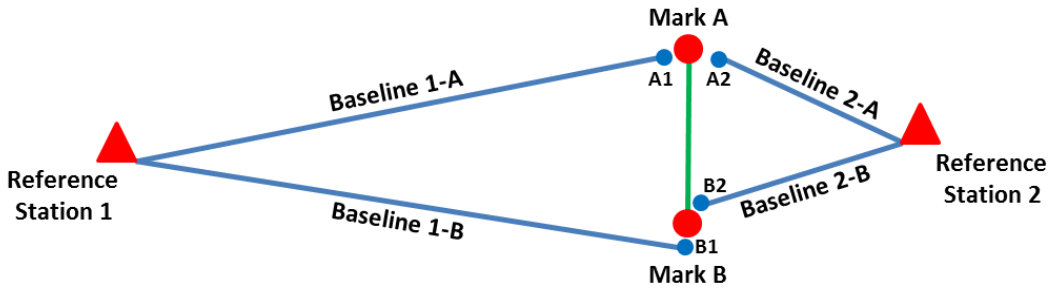


Figure 8-1 Coordinate comparison by multiple occupations

In the following calculations, it is assumed that the two reference stations (see Figure 8-1) have been surveyed to a high quality (e.g. are existing GDA Datum PSMs) such that any relative uncertainty between them has minimal effect when comparing A1 to A2 or B1 to B2.

The equipment manufacturer has stated that the RTK technique should achieve an RMS of 8mm+1ppm horizontally for each baseline measurement. To estimate the expected Survey Uncertainty (at 95% confidence in 2 dimensions) the expected RMS needs to be multiplied by a coverage factor of 2.45. If baselines 1-A and 1-B are 3km long and baselines 2-A and 2-B are 1km long, the expected measurement uncertainties can be calculated as follows:

$$Measurement\ Uncertainty\ A1 = (0.008m + 1ppm * 3{,}000m) * 2.45 = 0.011m * 2.45 = 0.027m$$
$$Measurement\ Uncertainty\ A2 = (0.008m + 1ppm * 1{,}000m) * 2.45 = 0.009m * 2.45 = 0.022m$$
$$Measurement\ Uncertainty\ B1 = (0.008m + 1ppm * 3{,}000m) * 2.45 = 0.011m * 2.45 = 0.027m$$
$$Measurement\ Uncertainty\ B2 = (0.008m + 1ppm * 1{,}000m) * 2.45 = 0.009m * 2.45 = 0.022m$$

Node	**Easting**	**Northing**	**ΔE (E_2 -E_1)**	**ΔN (N_2-N_1)**	**ΔPosition**
A1	394061.381	6947140.638			
A2	394061.363	6947140.652	-0.018	0.014	0.0228
B1	394279.379	6947104.414			
B2	394279.380	6947104.415	0.001	0.001	.0014

The comparison of the coordinates can be performed using the following equation:

$$E_n = \frac{OBS - REF}{\sqrt{U_{OBS}^2 + U_{REF}^2}}$$

Where:

OBS	Is the new determination
REF	Is the first determination or Reference
U_{OBS}^2	Is the Observed Uncertainty
U_{REF}^2	Is the Reference Uncertainty
$OBS - REF$	For a 2D position $OBS - REF = \sqrt{(E_{OBS} - E_{REF})^2 + (N_{OBS} - N_{REF})}$
E_n	Is the Evaluation Test

The test criteria are:

$\|\boldsymbol{E_n}\| \leq \mathbf{1}$	Satisfactory (Pass)
$\|E_n\| > 1$	Unsatisfactory (Fail)

The following steps outline the testing of the quality of the survey using coordinate comparison:

- The two occupations of mark A can be tested using their expected measurement uncertainties to calculate an outlier test as follows:

  $$E_A = \frac{\sqrt{(E_{A2} - E_{A2})^2 + (N_{A2} - N_{A1})^2}}{\sqrt{U_{A2}^2 + U_{A1}^2}}$$

  (Worked example: $E_A = \frac{\sqrt{(4061.381-4061.363)^2+(7140.638-7140.652)^2}}{\sqrt{0.027^2+0.022^2}} = \frac{\sqrt{(-0.018)^2+(0.014)^2}}{\sqrt{0.027^2+0.022^2}} = \frac{0.023}{0.035} = 0.65$);

- The test passes, therefore the positions A1 and A2 lie with their respective uncertainties. Hence, the two positions are valid estimates of the Most Probable Value of the position A;
- Having made two occupations that pass the outlier test, one can take a mean of the two sets of coordinates (A1 and A2) and the survey uncertainty (SU) of that mean can be estimated as follows:

  $$SU_{MeanA} = \frac{\sqrt{(U_{A1}{}^2 + U_{A2}{}^2)}}{\sqrt{Number\ of\ Observation}}$$

  (Worked example: $SU_{MeanA} = \frac{\sqrt{(0.027^2 + 0.022^2)}}{\sqrt{2}} = \frac{0.034828}{1.141} = 0.025\text{m}$).

The quality of the two occupations of mark B can then be tested in a similar manner to mark A, such that:

- The measurement uncertainties for the two occupations of mark B are used to calculate an outlier test for B1 and B2 using the same formula as for mark A.
  (Worked example: UOutlier $\text{Test}_B = 0.04$);
- Assuming the outlier test is passed, the survey uncertainty for the mean coordinates from the two occupations of mark B can also be calculated as for mark A.
  (Worked example: $U_{MeanB} = 0.017\text{m}$).

Having confirmed that all 4 occupations are not outliers, the expected relative uncertainty between marks A and B can be calculated:

$$RU_{A\ to\ B} = \sqrt{SU_{MeanA}{}^2 + SU_{MeanB}{}^2}$$

(Worked example: $RU_{A\ to\ B} = \sqrt{0.017^2 + 0.017^2} = 0.025\text{m}$);

The surveyor must then decide whether that level of relative uncertainty (RU) between marks A and B is suitable for the cadastral survey. In the example above, A and B need to be at least 290m apart before a relative uncertainty of 0.025m can satisfy the standard of 10mm plus 50ppm. It should also be noted that with longer baselines between the base stations and the cadastral marks, the uncertainties in each measurement above become larger and it becomes more difficult to achieve the required relative uncertainties between cadastral marks.

If the relative uncertainty achieved between marks did not meet the standard of 10mm plus 50ppm, the design of the RTK survey can be improved by:

- Improving the measurement uncertainty by reducing the distance between the reference station and the new marks (e.g. moving reference station 1 closer in the example), or;
- Improving the survey uncertainties of the mean coordinates by adding a third independent occupation at each mark.

If any of the new marks in the real-time GNSS survey are permanent survey marks, it is also necessary to estimate the horizontal positional uncertainty to attach to the mark in the Queensland Survey Control Register. If mark A in the example above was a permanent survey mark, its horizontal positional uncertainty can be estimated using the survey uncertainty of its mean coordinates and the horizontal positional uncertainty of the nearest reference station (station 2 in the example above). Therefore, if we assume that reference station 2 is an existing PSM with a stated PU of 0.010m, then the horizontal positional uncertainty of mark A can be estimated as:

$$PU_A = \sqrt{PU_2{}^2 + SU_{MeanA}{}^2}$$

(Worked example: $PU_A = \sqrt{0.010^2 + 0.017^2} = 0.020\text{m}$).

While most cadastral surveys do not require high precision height measurements, it is worth remembering that a disagreement in height between two GNSS occupations is a useful additional indicator of potential problems. It is therefore advisable to measure antenna heights or use fixed height poles in bipods. The above calculations can be repeated using a manufacturer stated RMS for height of 15mm+1ppm and using 1.96 as the cover factor for 95% confidence in one dimension. Repeating the above calculations using those values leads to an expected agreement in height between two occupations of the same mark (i.e. outlier test) of 0.047m or better.

8.4.2.2 Network RTK (NRTK)

The validation of NRTK uses a similar approach to that used Single Station RTK. In the case of NRTK the

calculation of uncertainty uses the distance to the Nearest NRTK base station. Further there is no requirement to 'switch' to a different base station. Otherwise, the validation of the independent positions is the same.

8.4.3 Guidance on specific GNSS survey techniques

This section gives guidance on how specific GNSS survey techniques can be applied to cadastral surveys.

8.4.3.1 Guidance on real time kinematic (RTK)

The analysis in the previous section indicates that RTK and Network RTK may be suitable for surveys where cadastral lines are several hundred metres in length, providing careful attention is paid to minimisation of site specific errors, ensuring sufficient observation time and use of dual occupations to detect possible outliers.

Therefore, RTK and network RTK are typically **best suited** to:

- Measuring long lines in rural cadastral surveys;
- Measuring long lines between control across large urban subdivisions;
- Surveying natural feature boundaries;
- Other non-cadastral survey tasks in the land development process, such as contour and detail surveys or for bulk earthworks.

It follows that RTK and network RTK cannot satisfy the standard of 10mm plus 50ppm over short lines and is therefore **not suited** to:

- Placement of or measurement between cadastral marks in urban areas where distances often range from 10s of metres (e.g. suburban lots) down to 1 metre (e.g. street corner truncations marks);
- Short connections between corners and reference marks in any cadastral surveys, whether urban or rural.

8.4.3.2 Guidance on static and quick static

Equipment and software available for undertaking static and quick static GNSS surveys can typically achieve a horizontal RMS of 3mm+0.5ppm. If the example calculations above are repeated using a measurement uncertainty of RMS * 2.45 for 95% confidence, the resulting relative uncertainty between marks A and B reduces to 0.009m. Therefore, static and quick static GNSS surveys can achieve uncertainties comparable to total station measurements and can be suitable for achieving the standard of 10mm plus 50ppm.

However, the observation times required for the static and quick static may make the techniques less efficient than traditional total station measurements. Even so, static and quick static GNSS survey techniques are suitable for high quality control surveys to set the overall framework for a cadastral survey; such as the surround survey for a new estate in an urban area or for measuring long lines on large rural cadastral parcels. The techniques can also be useful where real-time communications are problematic.

It is anticipated that when the static or quick static techniques are used, the survey will typically be connected to nearby PSMs or CORS. However, in remote areas, the use of the AUSPOS online processing technique may be suitable, so long as sufficient checks are built into the survey. For example, good practice would be to use AUSPOS to coordinate two or more PSMs at the extremities of the survey and check that other GNSS measurements in the cadastral survey fit between the PSMs within expected uncertainties.

8.4.3.3 Guidance on the use of GNSS to orient total station surveys

Where a vector between two points whose position was determined using GNSS techniques is used as the meridian for a cadastral survey the provisions of 3.24 *Meridian* apply. That being, the resultant meridian must have an accuracy of twenty arc seconds, or better.

Consider the example above where the expected relative uncertainty between two marks (A and B) that were coordinated using GNSS is 0.025m. To achieve an accuracy of 20" of arc A and B must be a minimum of 258 m apart. Obviously, as the Relative Uncertainty increases so does the minimum distance between the two points.

In addition to the consideration of meridian is the distance accuracy. For example, at the minimum separation of 258 m the standard requires the distance to conform to the 10mm plus 50ppm standard or 0.023m. Therefore, GNSS vectors used for cadastral surveys must comply with meridian and distance accuracy standards.

8.5 GNSS measurement traceability

Guideline under Standard 8.2 GNSS survey principles

8.5.1 Connecting a GNSS cadastral survey to the datum to achieve legal traceability

To ensure position measurements comply with the requirements of the *National Measurement Act 1960* (Cth), two (2) marks on the cadastral survey need to each be connected:

- using the AUSPOS online processing service, which is operated by Geoscience Australia (GA); or
- to two (2) continuously operating reference stations CORS in other networks, for which GA has computed high quality coordinates and issued Regulation 13 certificates under the *National Measurement Act 1960* (Cth); or
- to two (2) permanent surveys marks designated as GDA datum marks in the Queensland survey control register.

The quality and consistency of these connections should be checked using either a least squares adjustment constraining the published coordinates of the PSMs or CORS, or by doing coordinate comparisons similar to the approach described in the preceding sections.

8.5.2 The GNSS legal traceability regime

Section 24(a) of the Survey and Mapping Infrastructure Regulation 2024 requires a surveyor to ensure that any equipment used for a cadastral survey is standardised.

The *National Measurement Act 1960* (Cth) requires that where Australian legal units of measurement have been defined for a physical quantity, then measurements of that physical quantity shall only be legal when they are traceable to the Australian primary standard of measurement. For GNSS surveying, the National Measurement Institute has determined that the relevant physical quantity is **position**. It should be noted that is different from total stations, tapes and steel bands where the relevant physical quality is **length**.

Geoscience Australia (GA) has been appointed as a verifying authority for position under the *National Measurement Act 1960* (Cth) and the ARGN is now recognised as a so-called "value standard" for position. GA is able to extend that regime to other CORS. This is achieved by GA processing the CORS data relative to the ARGN and issuing a Regulation 13 certificate with its high quality position.

In Queensland, the department enables GNSS surveys to connect to the legal traceability regime via certain designated permanent survey marks (PSMs). The department has combined all of the episodic GNSS measurements between those PSMs across the state into a single geodetic adjustment. That adjustment is then constrained by the ARGN and other CORS with Regulation 13 certificates to create the datum layer of the survey control register.

8.6 Coordinates, heights, bearing and distances

Guideline under Standard 8.2 GNSS survey principles

8.6.1 Use of Geocentric Datum of Australia and Map Grid of Australia

Given the requirement to achieve legal traceability by connecting a GNSS cadastral survey to CORS or to designated PSMs, the GDA/MGA[2,11] coordinates of those PSMs or CORS will be propagated onto corners, reference marks and new PSMs in the cadastral survey. A GNSS cadastral survey should be treated like any other cadastral survey and conform to any other survey requirements relating to the use and depiction of coordinates. More information on GDA/MGA can be found in the GDA technical manual published by ICSM <www.icsm.gov.au/gda2020-and-gda94-technical-manuals>.

When using the static or quick static GNSS techniques in a cadastral survey, it is recommended that coordinates of the designated PSMs or CORS connected to the survey be used to "seed" the post-

processing. Those high quality coordinates can significantly improve the computation of the GNSS baselines, e.g. by improving the likelihood of correctly resolving ambiguities.

Similarly, it is recommended that the coordinates of designated PSMs or CORS in the area be used to coordinate RTK base stations used in a cadastral survey.

8.6.2 Use of terrain distances

Section 48B of the *Land Title Act 1994* requires that distances shown on cadastral plans be corrected so that they are a horizontal distance between the marks on the ground. This is interpreted as being at the mean terrain height of the line (referred to as "level terrain distances" in this section).

When using a total station, the measurements are made at the height of the terrain and level terrain distances are typically achieved by simply applying a slope correction to the measured distances.

However, distances resulting from GNSS measurements are computed on the ellipsoid. Surveyors should note that ellipsoidal distances can be significantly different to terrain distances depending on the height of the terrain in the area. A change in height of 6.5m causes approximately a 1ppm effect on distances. Therefore, at 650m above the ellipsoid, the difference between terrain and ellipsoidal distances is approximately 100ppm. Similarly, variations in height across a cadastral survey covering a large area may also be significant.

8.6.3 Use of local projections and scale factors

Given the need to make comparisons on existing PSMs with GDA coordinates and Australian Height Datum (AHD) heights, there will often be a need to set the controller in the field and/or in post processing software to use GDA/MGA[2,11] and AusGeoid. Similarly, it is sometimes desirable to set the GNSS equipment or software to operate in a local plane coordinate system and/or scale factor when searching for original marks or placing new marks.

Surveyors should be aware of and take great care in relation to the effect that changes to the datum and/or projection settings in their GNSS equipment can have on the bearings, distances and heights stored and/or displayed during the cadastral survey.

Surveyors should also be aware that the projection options set in the controller in the field and/or in post processing software may also affect what types of distances are stored and/or displayed. For example, if the projection is set to MGA[3] then grid distances may be displayed or stored that are subject to line scale factors and can be significantly different to level terrain distances.

Most GNSS equipment allows the surveyor to fit GNSS measurements to local marks; a technique sometimes referred to as a "local calibration" or "site calibration". Care should be taken when using this approach, which fits the GNSS measurements to a previous cadastral survey by swinging bearings and scaling distances to agree with a line between two original marks. If the true measurement between the marks has excess or shortage compared to the previous cadastral survey, that excess or shortage can then distort all of the subsequent distances computed throughout the GNSS survey.

The above issues can be addressed using various approaches, such as computing height and projection scale factors to give a combined scale factor that converts MGA[3] distances to terrain distances in the project area. Another approach is to create a modified transverse mercator projection that uses a combined scale factor to create a local plane coordinate system at the longitude and height of the project.

A key overarching point is that surveyors should pay careful attention to the use of GDA, MGA, local calibrations, scale factors and projections to ensure that measurements are not unduly distorted for cadastral purposes, while also meeting requirements for depiction of level terrain distances and propagation of GDA/MGA[2,11] coordinates.

[11] GDA94/MGA94 or GDA2020/MGA2020, depending on the particular GDA/MGA being used for the survey.

8.7 GNSS survey records

Guideline under Standard 8.2 GNSS survey principles

8.7.1 Field notes

As with any survey, field notes or logging sheets are useful for documenting a GNSS survey. Surveyors should therefore give consideration as to what should be recorded in the field, either on paper and/or digitally in the survey controllers used with the GNSS receivers.

8.7.2 Data processing and archiving

In RTK surveys, it is advisable to configure receivers to log the raw GNSS data to enable post-processing if checks are required at a later date.

On completion of field work, software supplied with the GNSS equipment is typically used to analyse the GNSS measurements that will be used in the cadastral survey.

Multiple occupations need to be analysed to derive the best available positions for the cadastral marks. Analysis is typically done using least squares adjustment or coordinate comparisons. It also requires analysis of how well the new GNSS measurements agree with survey control information for the existing PSMs and/or CORS that were connected during the survey. The final positions of corners, reference marks and PSMs are then used to compute bearings and terrain distances suitable for the cadastral survey.

It is recommended that all the project files in the software be archived, including raw data, processing results, configuration files (e.g. with datum and projection information). It is also recommended that the software be used to create suitable reports that can be archived as digital files and/or paper printouts.

When AUSPOS is used, the surveyor should archive a copy of the AUSPOS processing report along with the RINEX input file.

Where survey records or a survey report is required to be submitted with a survey plan, GNSS processing reports and printouts may be necessary to document the GNSS aspects of the survey. Where GNSS was used to determine any right line boundaries in a survey, then commentary on which lines were determined by GNSS and methodology adopted may be integrated into any other report required to be submitted with the survey, such as a reinstatement report under section 3.33 *Reinstatement of boundaries*. (See examples reports in Appendix F *Reports*).

8.7.3 Permanent survey marks and survey control

Guideline under Standard 8.2 GNSS survey principles

GNSS surveys are subject to all existing requirements relating to new or existing PSMs, including completion of permanent survey mark plans and lodgement of information for inclusion in the Survey Control Register.

When AUSPOS is used, it will typically be used to process an occupation of a PSM. To ensure that the AUSPOS results are correctly reflected in the Survey Control Register, all relevant digital files should be emailed to the survey control business area of the department with “SCDB” contained within the subject field. The following files should be attached:

- permanent survey mark plan or maintenance form as PDF;
- The AUSPOS processing report as PDF;
- The AUSPOS occupation may be valuable for the State Control Survey, especially if there are several hours of GPS data. Therefore, the surveyor should also attach the RINEX input file(s).

9 Plan standards

This section should be read in conjunction with the *Registrar of Titles Directions for the Preparation of Plans,* <www.titlesqld.com.au/plans-sketches/>.

9.1 Abbreviations

Guideline under Standard 9.55 Plan presentation

See section 9.55 *Plan presentation*, page 153.
See Appendix B *Abbreviations*, page 174.

Abbreviations may be used where space prevents the use of the full word.

A limit of three consecutive letters is preferred (e.g. Cen. face S.F.P. or C face SFP; not C.F.S.F.P.).

The full stops denoting an abbreviation may be omitted.

The abbreviations traditionally used on survey plans (shown in Appendix B) enable certain survey information to be presented clearly and unambiguously and therefore their use is a way of meeting the requirements of section 9.55 *Plan presentation*.

9.2 Action statements

Standard under the SMI Act

See section 3.6.1 *Calculated areas*, page 14.
See section 3.6.5.2 *Dealing with multiple areas of road*, page 17.
See section 3.10 *Changing deeds of grant, reserves, leases and trust land*, page 20.
See section 5.17 *State land actions*, page 97.
See section 10.2.2 *Creation of roads in leases, reserves, trust land and USL*, page 155.
See the *Land Act 1994*.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.10 'Cancelling clause containing reference to unallocated State land'.

An action statement is required for opening and/or closing road under the *Land Act 1994*, and must appear on the first sheet of the plan.

For the action statement required for opening road under the Land Title Act 1994 refer to section 10.2.1 *Creation of roads in freehold land*.

9.2.1 Road opening

Where a single parcel is the subject of the approval, the action statement should take the following form:

Area of New Road (1–5–7–9–1) 85 m²

Where several non-contiguous parcels of new road are created from a single lot, each parcel of land to be dedicated as road must be clearly shown as 'new road' on every sheet that depicts the new road. It is sufficient to provide a total area of the parts:

Total Area of New Road 1·234 ha

Where road is to be opened from more than one lot, the area of the excision from each lot is required to be identified. The action statements may be grouped and a total area of new road is required. The action statement should take the following form:

Area of new road	*(1–4–6–7)*		*45 m²*
	(8–1–8)		*272 m²*
	(27–2–12–13–5–27)		*1 ·254 ha*
		Total	*1 ·2857 ha*

9.2.2 Road closure

See section 10.2.2 *Creation of roads in leases, reserves, trust land and USL*, page 155.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.10 'Cancelling clause containing reference to unallocated State land'.

Where road is added to an existing parcel (including USL), the action statement should take the following form:

Area of closed road (1–2–3–4–6–1) *1·256 ha*

Where road is to be closed and included into more than one lot, the area added to each lot is required to be identified. The statements may be grouped. A total area is required. The action statement should take the following form:

Area of closed road	*(1–3–4–5)*		*2564 m²*
	(9–8–11–9)		*127 m²*
		Total	*2691 m²*

Where the road closure action creates a lot (or lots) and does not add the closure to any existing lot:

Area of closed road (Lot 1) *2564sqm*

9.2.3 Simultaneous road opening and closure

See section 3.10.5 *Simultaneous opening and closure of road*, page 22.
See section 10.4 *Simultaneous opening and closure of road*, page 156.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.10 'Cancelling clause containing reference to unallocated State land'.

Action statements for simultaneous road opening and closing in a single parcel should take the following form:

Area of new road (4–5–6–7–8) *2560 m²*
Area of closed road (1–2–11–12–1) *3056 m²*

Where there are many lots on the one plan, action statements for simultaneous road opening and closing in multiple parcels should take the following form:

Area of new road	*(1–4–6–7)*		*45 m²*
	(8–1–8)		*272 m²*
	(27–2–12–13–5–27)		*1·254 ha*
		Total	*1·2857 ha*

Area of closed road	*(1–3–4–5)*		*2564 m²*
	(9–8–11–9)		*127 m²*
		Total	*2691 m²*

9.3 Adjoining description

Guideline under Standard 3.5 Adjoining information

See section 3.5 *Adjoining information*, page 13.
See Appendix B *Abbreviations* page 174.

All adjoining information should be shown in sloping hairline. The latest adjoining registered descriptions and relevant catalogue numbers are shown as follows:

Where the adjoining land consists of a number of lots on the same plan, it is not necessary to show the adjoining plan number separately on each lot, provided there is no ambiguity as to the relevant plan number for each lot.

For adjoining information that is either volumetric or 'below the depth' it should be shown in broken sloping hairline style. For example:

Volumetric parcel	'Below the depth' parcel
56 SP123456 (Volumetric)	24 RP123456

It is only necessary to show secondary interests in adjoining land if they abut the subject boundary and benefit the subject land. However, it is acceptable to show other secondary interests as additional information relevant to the survey.

For the requirements for showing adjoining descriptions of common property, see the *Registrar of Titles Directions for the Preparation of Plans*, Direction 11.3 'Description of common property'**.**

9.3.1 Adjoining easements

Guideline under Standard 3.5 Adjoining information

See section 3.5 *Adjoining information*, page 13.

Show registered easements and registered plan numbers that abut the subject boundary. For example:

9.3.2 Adjoining leases

Guideline under Standard 3.5 Adjoining information

See section 3.5 *Adjoining information*, page 13.

Leases registered under the *Land Title Act 1994* need not be shown as adjoining information.

9.3.3 Adjoining railway

Guideline under Standard 3.5 Adjoining information

See section 3.5 *Adjoining information*, page 13.

The railway name may be shown in addition to the lot-on-plan description.

9.3.4 Adjoining building units or group titles plans

Standard under the SMI Act

See section 9.18.1.2 *Common property*, page 136.

With the introduction of the *Body Corporate and Community Management Act 1997*, comatose titles as per the *Building Units and Group Titles Act 1980* no longer exist. Accordingly, where the adjoining information is scheme land (including BUP or GTP), it will be shown as a lot/plan description or a

common property/plan description as appropriate. It is not necessary to show the scheme name. For showing common property see the *Registrar of Titles Directions for the Preparation of Plans*, Direction 11.3 'Description of common property'.

9.4 Administrative plans (APs)

Standard under the SMI Act

See departmental procedure SLM/2014/1069, *Plan requirements for State land dealings*
<www.resources.qld.gov.au/?a=109113:policy_registry/plan-requirements-state-land-dealings.pdf>.
See departmental standard SIG/2013/571, *Administrative plans,*
<www.resources.qld.gov.au/?a=109113:policy_registry/administrative-plans.pdf>.

Government departments produce plans of survey for administrative purposes, such as Administrative plans (AP), National parks and wildlife (NPW) plans and Forestry (FTY) plans. These plans are prepared and used mainly for government-related purposes (e.g. issuing of permits and licences).

All survey plans including Administrative plans and NPW and FTY plans reside with the department and can be searched through CISP.

Surveyors are reminded that Administrative plans define boundaries and areas of land where a cadastral survey is not required. They are not based on conventional field surveys, and may be similar to leases of low value or short term under Part 5 of the *Registrar of Titles Directions for the Preparation of Plans*. Administrative plans must not be used where a cadastral survey has been conducted. If field survey is required for an administrative purpose, then an Identification survey plan or Survey plan should be produced instead of or in conjunction with the Administrative plan.

If surveyors identify issues with Administrative plans, the same action should be taken as for other survey plans (i.e. refer the matter to the local departmental principal surveyor).

9.5 Alignment offsets

Guideline under Standard 3.23.1 Boundary marking

See section 3.23 *Marking*, page 42.
See section 9.15.3 *Corner references (reference marks)*, page 129.
See section 9.36 *Offsets*, page 145.
See section 11.1 *Alignments*, page 160.

Offset lines should be avoided if possible. Offset marks should be referenced as a direct connection from corners.

9.6 Bearings

Standard under the SMI Act

See section 3.18 *Dimensions*, page 33.
See section 9.37 *Original dimensions*, page 145.
See section 9.42 *Ranged only and Reads bearings*, page 147.

Bearings are shown:

- in degrees, minutes and seconds, rounded as appropriate
- outside the parcel
- in a clockwise direction for completed lots
- reduced to the meridian of the survey
- upright on the face of the plan
- sloping in all tabulations.

It is preferable that the following use of '0' be adopted, for example:

270°0′; 270°03′; 270°00′30″

Note: The use of 270°00′00″ is to be avoided.

9.7 Buildings and other improvements on or near a boundary

Guideline under Standard 3.20 Encroachments and improvements on or near a boundary

See section 3.11 *Compiled plans and boundaries*, page 24.
See section 3.20 *Encroachments and improvements on or near a boundary*, page 35.
See section 3.23.2 *Reference marks*, page 44.
See section 9.15.4 *Occupation*, page 132.
See section 19 and section 20 of the *Survey and Mapping Infrastructure Regulation 2024*.
See the *Registrar of Titles Directions for the Preparation of Plans*, Part 9 'Building format plans'.

Encroachments must be clearly illustrated. As a minimum, the following would be required on a plan to satisfy the requirement that the size, nature and location of an encroachment must be shown on the plan:

- The encroaching structure should be described (e.g. block wall, house).
- The encroaching edges of the structure should be depicted on the plan, not just one or more corners without any indication of how these relate to the structure.
- The plan must show dimensions to indicate:
  - the size and extent of the encroachment
  - the relationship to cadastral corners.

Similar information should be shown in relation to other permanent improvements that:

- are adversely affected by the reinstatement of the boundary; or
- are close to the boundary and can be relied on in the future to provide evidence of the location of the boundary.

Encroachments and other permanent improvements may be shown as follows see Figure 9-1 to Figure 9-3 below:

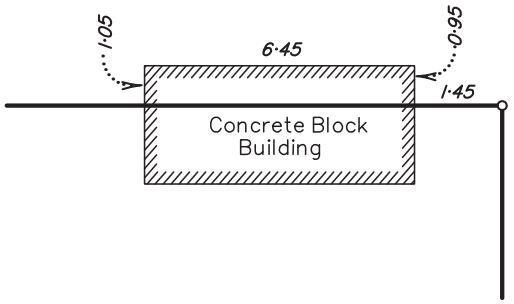


Figure 9-1 Example of permanent improvement

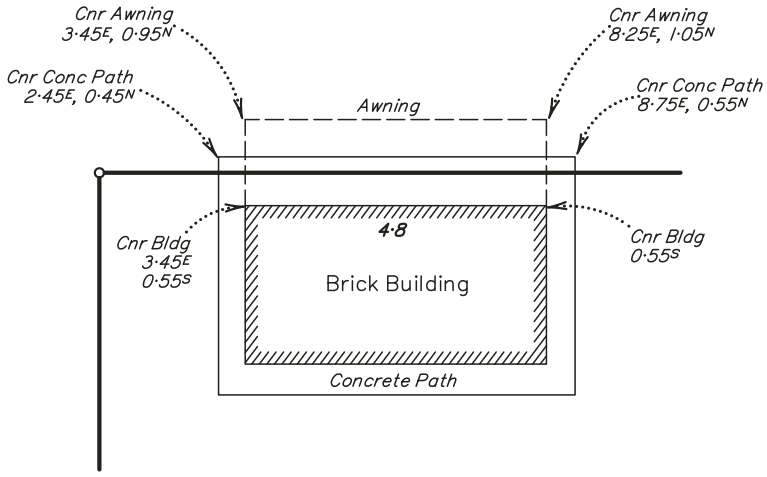


Figure 9-2 Example of permanent improvement

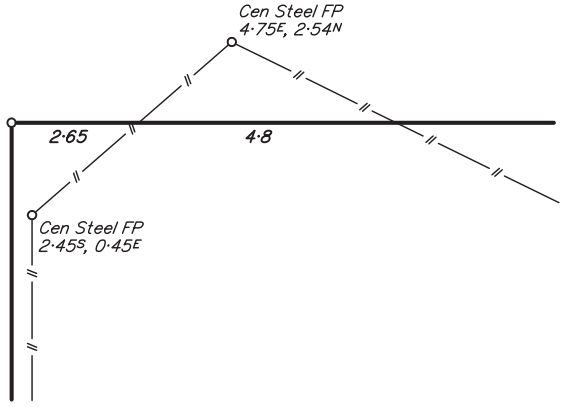


Figure 9-3 Example of permanent improvement

When used as a reference mark, connections thereto may be shown 'on face' or tabulated in the required manner.

Section 3.23.2 *Reference marks* requires a cadastral surveyor to record the location of permanent improvements (e.g. buildings, retaining walls) on the land that will assist in the future reinstatement of boundaries. Other improvements such as bridges, dams, mine shafts, etc. may be shown if connected to in the course of survey.

9.8 Calculated lines

Standard under the SMI Act

See section 3.18 *Dimensions*, page 33.
See section 3.27 *New lot boundaries intersecting registered secondary interests*, page 49.
See section 3.43 *Unsurveyed and/or calculated boundaries*, page 70.
See section 9.43 *Roads*, page 147.
See section 9.52 *Traverses*, page 150.

Calculated boundaries can be broadly categorised as:

- corners marked (e.g. unsurveyed side of an internal road). The lines must be shown as full lines and correctly labelled
- corners not marked (e.g. remote and inaccessible terrain). Lines shown broken on the plan and successive plans and correctly labelled.
- secondary interest (e.g. intersected secondary interest or secondary interest within an existing secondary interest). Lines shown broken on the plan and successive plans and correctly labelled.

Lines with computed bearings and distances should show the word ‘Calc’. On successive plans where these lines are compiled, they are shown as ‘Orig’, but the linework will remain as that shown for calculated boundaries.

9.9 Canals

Information

Return to section 5.5 *Canals,* page 93.

9.10 Cancelled boundaries

Guideline under Standard 9.28 Linework

See section 9.28 *Linework,* page 141.

Once cancelled, boundaries are no longer shown on plans.

9.11 Centre lines

Guideline under Standard 3.23.1 Boundary marking

See section 3.23 *Marking,* page 42.
See section 9.36 *Offsets,* page 145.

Road centre lines—when shown, indicate as per Figure 9-4:

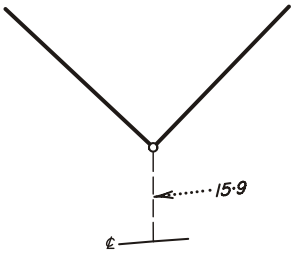


Figure 9-4 Road centre lines

Railway centre lines—connections to ‘Rly’ are to be shown either on face or by tabulation in the ‘Traverses etc.’ table.

9.12 Compass survey

Standard under the SMI Act

See section 9.54 *Watersheds,* page 152.

When parts of a boundary have been previously surveyed by compass, these boundary lines should be noted by the term ‘compass survey’ on face see Figure 9-5 below:

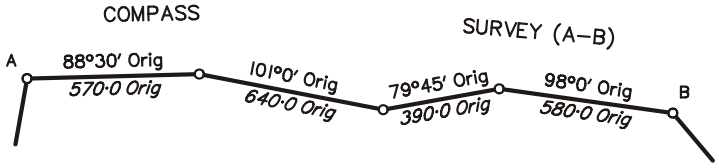


Figure 9-5 Compass survey

9.13 Connections to distant points

Guideline under Standard 9.6 Bearings

See section 9.6 *Bearings*, page 122.
See section 9.42 *Ranged only and Reads bearings*, page 147.

'Reads' bearings to beacons, TV towers, etc. can be shown on face or entered in the 'Traverses, etc.' table for clarity.

9.14 Conversions

Standard under the SMI Act

See section 9.33 *Metric numeration*, page 144.
See section 9.38 *Original grants*, page 145.

Imperial distances must be converted to three (3) decimal places. Imperial areas must be converted to the nearest square metre (see Table 9-1).

Table 9-1 Conversion factors

Conversion factors to be adopted are as follows:		
From Unit of Measurement	**To Unit of Measurement**	**Conversion Factor**
Length		
Mile	Metre	1,609.344
Chain	Metre	22 x 0.9144
Yard	Metre	0.9144
Link	Metre	22 x 0.9144/100
Foot	Metre	0.9144/3
Inch	Metre	0.9144/36
Area		
Square yard	Square metre	$(0.9144)^2$
Square foot	Square metre	$(0.9144)^2/9$
Square inch	Square metre	$(0.9144)^2/(9 \times 144)$
Acre	Square metre	$4{,}840 \times (0.9144)^2$
Rood	Square metre	$1{,}210 \times (0.9144)^2$
Perch	Square metre	$30.25 \times (0.9144)^2$
Source: *Schedule 11 – Conversion factors, National Measurement Regulations 1999 (Cth)*		

9.15 Corner information

Guideline under Standard 3.23.5 Survey mark information on plans

See section 3.23 *Marking*, page 42.

Corner information deals with the method of presentation on the face of the plans for:

- corner marks

  (i.e. 'original' corner marks and 'new' corner marks)
- reference marks

  (i.e. 'original' reference marks and 'new' reference marks)
- occupation.

  (i.e. 'original' occupation and 'new' occupation)

9.15.1 General guidelines

See Figure 9-6 and Figure 9-7 following this section.

Corner information should generally be shown as in Figure 9-6 (i.e. 'on face' presentation) provided the plan can be reproduced at a reduced scale without loss of clarity, otherwise the tabulated presentation method as in Figure 9-7, where reference mark (including permanent survey mark) information is referred to a table(s), should be used. A mixture of 'on face' and tabulated presentation is to be avoided.

Section 3.23.5 *Survey mark information on plans* requires that all corner information must have a clear and unambiguous meaning. Use of the terms referred to in the following sections is preferred. However, there may be certain circumstances where other logical descriptions about a corner may be used. Additional explanation can be provided in the survey report.

Information on the marking of the corner (i.e. monument at the corner) should be written first, and information on or referring to reference marks and/or occupation should be written in order of proximity after the corner mark. Information on the marking of the corner is shown at all corners that are reinstated by the survey.

Occupation references are generally shown 'on face' but can be referred to the Reference Marks table where the reference 'on face' does not lead to ambiguity as to the marking of the corner. It is preferred that occupation references are determined 'square' from the principal lines run (e.g. station 3—Figure 9-6 and Figure 9-7); except where a bearing and distance is required to avoid ambiguity (e.g. station 23—Figure 9-6 and Figure 9-7).

The methods of presentation are influenced by the criteria that ensures clarity of information is maintained on reduction and reproduction of the plan.

9.15.2 Corner marks

See section 3.23 *Marking*, page 42.
See Part 4 of the *Survey and Mapping Infrastructure Regulation 2024*.

Corner marks refer to the survey marks and/or branded occupation found, placed or adopted at all new or existing corners on the survey (e.g. pegs, survey posts or survey marks in occupation at the corner to represent the corner). For example:

OP; Peg pld; Rmns OSP; O Ramset In Br Wall; Screw in Conc fd

The type of nail can be shown (e.g. clout, ramset, spring head).

9.15.2.1 Marks at original corners

See section 9.15.2.2 *Marks at new corners*, page 128.
See Figure 9-6 and Figure 9-7 following this section.

When the origin of the existing mark recovered at the corner is known (i.e. recorded on a previously registered survey or a lodged Identification Survey or lodged Redundant Catalogue Plan), the original corner mark is described as follows (the mark may be identified by the addition of the catalogue number of the plan of origin):

OP; OSP; O Nail in Cen RFP; O Screw in Conc (IS2345); O Ramset in Br Wall (RC98765)

When the origin of the existing mark found at the corner is unknown (i.e. no previous cadastral connection on a registered plan, identification survey or redundant catalogue plan) the corner mark found is described as follows:

Peg fd; Screw in Conc. fd

When there is no existing mark or any evidence thereof at the corner, the corner is described as follows (note that the term 'No Mk' is never shown on a plan):

No O Mk

When there is no existing mark or evidence of a prior survey mark at the corner, and a new mark is placed at the original corner, the corner mark is described as follows:

No O Mk *Peg pld*	*No O Mk* *Survey Post pld*

Note: 'Peg pld' and 'Survey Post pld' etc. are shown on face on the plan when placed at an original corner. These pegs are included in the listing of 'New Pegs' shown in the marks placed statement on face on the plan (if shown) even though they are placed at an original corner. For example:

Peg placed at Stns 3–9, 11–15 and 19

Peg placed at all new and original corners unless otherwise stated.

When the original mark at the corner has become inaccessible since the original survey and hence is not able to be connected to, then the corner mark, suitably qualified, is described as follows:

OP not fd (in deep fill); O D/H not fd (under conc.)

When remains of an existing mark or evidence of a prior survey mark is found at the corner, the corner mark is described as follows:

Rmns OP; OP hole; Rmns OSP; OSP hole

When an existing mark is found disturbed and that same mark is reset at the original corner, the corner mark is described as follows (note that the term 'replaced' is never shown on a plan):

OP distd Reset; OSP lying out Reset

When an existing mark or remains thereof is removed at time of survey, and is replaced by a new mark of the same type at the original corner, the corner mark is described as follows (note that the term 'replaced' is never shown on a plan):

OP burnt Renwd; Butt OSP Renwd

When an existing mark or remains thereof is removed at time of survey, and is replaced by a new mark of a different type at the original corner, the corner mark is described as follows:

OP remvd *Post pld*	*Butt OSP remvd* *Peg pld*	*Peg pld* *OP 0·14S, 0·05W remvd*

When an existing mark or remains thereof has been disturbed by construction works (fencing, retaining wall, building) and the occupation is adopted at the original corner, the corner mark is described as follows:

Cen RFP ↑ *OP 0·25N*	*GI Nail in RFP* *OP at ft* *0·25W*	*NE Cnr blk wall at cnr*

9.15.2.2 Marks at new corners

See section 9.15.5 *Notations*, page 133.

When the survey establishes new corners, the survey marks placed at these corners are shown either as corner information or by statement on face. For example:

Peg placed	*Peg placed at all new corners*	*Survey Post placed at Stns 4, 7, 11–14*
(shown as corner information)	***(statement on face)***	

If new survey marks placed are branded, this information must also be quoted in the corner information or in the statement on face. For example:

Peg Branded (↑) placed	*Branded Peg placed at all new corners*	*Survey Post branded (↑ 3) placed at Stns 4, 7, 11–14*
(shown as corner information)	***(statement on face)***	

Variations such as 'Peg pld in cairn of stones', 'Peg driven flush', 'Plastic or Concrete Peg placed', 'Star Picket Pld' are indicated either in the corner information or in the statement on face.

When the corner is inaccessible and hence is not able to be marked, then the corner is described as having no mark placed and a suitable qualification is added. For example:

No mk pld (in swamp)	*No mk pld (inaccessible – airport land)*

9.15.3 Corner references (reference marks)

See Figure 9-6 and Figure 9-7 following this section.

Corner references are the reference marks (e.g. iron pins, permanent survey marks, spikes, nails, screws, star pickets, broad arrows, drill holes, pointer pegs, corners of buildings, marks on poles, branded trees, bench marks) that are placed or connected to in the course of the survey. Corner references assist in reinstating a corner once the original corner mark has been lost.

These marks are in addition to the monument denoting the corner. All connections will be from the corner to the reference mark.

Dimensions to reference marks may be shown on the face of the plan. Where space does not permit, dimensions may be shown by diagram or in the 'Reference marks' table. A mixture of 'on face' and tabulated presentation of the dimensions to reference marks is to be avoided. Descriptions of corner information on the face of the plan are to be consistent with the descriptions in tables (i.e. descriptions such as 'OIP gone' or 'OIP (new ref)' to be shown both on the face and in the table). See Figure 9-6 and Figure 9-7 at the end of this section.

9.15.3.1 Original reference marks

See section *3.33 Reinstatement of boundaries,* page 56.
See section *3.37 Survey reports*, page 64.
See section *9.7 Buildings and other improvements on or near a boundary*, page 123.
See section 19 of the *Survey and Mapping Infrastructure Regulation 2024*.
See Figure 9-6 and Figure 9-7 following this section.

When the origin of an existing reference mark recovered adjacent to a corner is known (i.e. recorded on a previously submitted plan), the original reference mark is described as follows. Best practice is to identify the mark by the addition of both the station number and catalogue number of the plan which was the origin of the current reference—either on the face of the plan or in the reference marks table. For example:

OIP (7/RP1234); ORT (11/C4321); O Nail in Cen RFP (3/RP1234);

O Screw in Conc. (9/RP1234); OIP (I.S. 1568)

When the origin of an existing reference mark found adjacent to a corner is unknown (i.e. no previous cadastral connection on a submitted plan), the reference mark found is described as follows:

Pin fd; Nail in Bit fd.

When the original reference mark of known origin is found and used, but the mark is subsequently destroyed prior to the completion of the survey, it is described as follows:

OIP (7/RP1234) *(surveyed 16/7/2020, now gone)*	*O Screw in kb (3/RP1234)* *(surveyed 16/7/2020, now gone)*

When it is evident the original reference mark is missing or destroyed, the reference mark is described as follows (the connections to the missing or destroyed reference mark are shown on the plan from the original survey records):

OIP gone; ORT gone

When the original reference mark has become inaccessible since the original survey, and hence is not able to be found, the reference mark, suitably qualified, is described as follows:

OIP not fd *(under conc.)*	*O Nail in Cen RFP not fd* *(in dam)*

In a limited number of cases where numerous reference marks exist, some may be described as "(not searched)". This description must only be used when a surveyor has considered and connected to sufficient monuments to reinstate a corner and proven that the adopted marks are reliable, with greater weight being given to older monuments closest to a corner, in accordance with *section 3.33 Reinstatement of boundaries*.

OIP *OIP* *O Nail in kerb* *O Bottle (not searched)*	*OP* *OIP* *OIP (not searched)* *O Nail in kerb*

When the remains of an existing reference mark or evidence of a prior reference mark is found, the reference mark is described as follows:

ORT hole *(burnt out)*	*Rmns OIP* *(rusted out)*

When the existing reference mark is found disturbed, and that same mark is reset in the original position, the reference mark is described as follows:

OIP distd reset	*O S Pkt lying out reset*

When the existing reference mark is removed at the time of survey, and is replaced by a new mark of the same type in the original position, the reference mark is described as follows (note that the term 'replaced' is never shown on a plan):

OIP distd *renwd*	*OPM damaged* *renwd*

When an existing reference mark is removed at the time of survey and replaced by a new mark of a different type, the reference mark is described as follows:

OIP remvd *PM pld*	*O Ptr remvd* *Pin pld*

When an existing mark is referenced from a new station, and the connection can be calculated from the stated origin plans and that calculated connection agrees with the new connection, the reference mark is described as follows (note that in addition to the connection to the new corner, a connection to the original corner may also be shown in the usual manner):

OIP New Conn	*ORT Stp New Conn*

When an existing reference mark is found disturbed or out of position and the same mark is re-referenced, the reference mark is described as follows:

OIP distd *(new ref)*	*OIP distd* *180°0', 1·008 (new ref)*

Re-referencing of marks can occur when additional information is available to allow for updated reinstatement of a corner. Any re-referencing must be fully explained in the survey report, see section 3.37 *Survey reports*. When an existing mark is referenced from a new station and there is disagreement between the new reference and the calculated reference from the origin plan/s, the reference mark is described as follows:

OIP (new ref)	*OIP* *180°0', 1·008 (new ref)*

When misdescriptions are found in the existing reference, "(noted and checked)" or "(N & C)" is to be used. Care should be taken to ensure clarity regarding which attribute of the information is noted and checked. For example, if the type of mark does not agree, "(N & C)" should appear next to the mark type, if the bearing is reversed, "(N & C)" should appear next to the bearing, or if the figures are transposed, "(N & C)" should appear next to the relevant bearing or distance. It is also appropriate to use "(N & C)" where the reinstated position of a corner does not change, and the connection to the reference mark differs from the original. In this instance, "(N & C)" should appear next to the bearing and/or the distance. Reasons for using "(N & C)" must be made clear by noting either as corner information, within the reference mark table or in the survey report. When it is appropriate to use "(N & C)", the reference mark is described as follows:

O Screw (N & C)(not a nail)	*Rmns ORT (N & C)(brg reversed)*

REFERENCE MARKS

STN	*TO*	*ORIGIN*	*BEARING*	*DIST.*	
1	*ORT (Bldwd)*	*27/C31101*	*75°0' (N&C)*	*12·04*	*Reversed*
3	*O Screw in kerb (N&C)*	*30/C31101*	*347°30'*	*8·65*	*Not a nail*
4	*OIP*	*2/RP98124*	*231°30' (N&C)*	*1·0 (N&C)*	*No change in reinstatement, see Report*

9.15.3.2 New reference marks

See Figure 9-6 and Figure 9-7 following this section.

New reference marks can be placed or connected to at existing corners as well as at new corners established by the survey.

When new reference marks are placed or connected to in the course of the survey, the reference marks may be shown either on the face of the plan, by diagram or in the 'Reference marks' table. When showing new reference marks by the method of tabulation, no reference to the mark is shown on face as corner information.

9.15.3.3 Permanent survey marks as reference marks

See section 3.28 *Permanent survey marks and connection to datum*, page 50.
See Figure 9-6 and Figure 9-7 following this section.

Permanent survey marks are corner references. In general, the requirements and guidelines relating to reference marks, in particular regarding description, are the same for permanent survey marks, except that when reference marks are shown by the tabulation method, permanent survey marks are tabulated in a separate table headed 'Permanent marks'.

The plan must show the mark type for any new permanent survey mark (i.e. brass plaque, star picket, deep driven mark, mini mark). If a permanent mark table is used, the mark type can be shown in a column headed 'type'.

9.15.4 Occupation

References to occupation are the occupation or improvements (e.g. fence posts, walls, buildings, poles, manholes, gully traps or any such immovable objects) that are connected to in the course of the survey.

These references are in addition to the monument denoting the corner and marks referencing the corner (reference marks). All connections will be from the corner to the occupation.

All occupation present at all corners reinstated or established by a survey is shown (see 3.23.5 *Survey mark information on plans*).

9.15.4.1 Occupation at original corners

See Figure 9-6 and Figure 9-7 following this section.
See section 9.15.1 *General guidelines*, page 127.
See section 9.15.2.1 *Marks at original corners*, page 127.

The occupation present at the time of the survey is shown at existing corners regardless of whether the occupation was shown on a previous survey plan or not. However, where the original corner mark was a survey mark in occupation, then the survey mark will be described on the plan. For example:

Cen RFP *0·06E*	*Cen GIFP at Stn*	*O Ramset In Br Wall* *(RC98765)*

When occupation referenced on a previous plan is adopted, the original occupation is described as follows. The occupation is to be identified by the addition of the catalogue number of the plan used as the source for the adopted reference.

O Cen Face SFP *0·07N, 0·09E* *(SP299988)*	*O NE Cor Conc Bldg* *0·01S, 0·04W* *(IS319925)*	*O Cen GIFP at Stn* *(1/DP295945)*

When occupation referenced on a previous plan is found undisturbed but does not agree with the original reference, the occupation is described as follows:

O Cen RFP *0·3S, 0·35W (N & C)*	*O Cor Bldg* *0·02N, 0·65W (N & C)*

9.15.4.2 Occupation at new corners

If a new corner is established at which occupation exists (e.g. fence post, walls, buildings, poles, manholes or any such immovable object), the position of the occupation is referenced from the corner. For example:

Cen RFP *0·3S 0·06W*	*Cor Br Bldg* *0·02N* *0·05E*	*C face SFP* *220°15', 0·16*

When a new corner is established by placing a survey mark in occupation (nails, screws, etc. in a fence post, brick wall, etc.), the occupation is referenced. For example:

Nail in RFP *Cen RFP 0·015S*	*Ramset in Cor Br* *Cor Br 0·12W*	*Nail in Cen RFP at* *Stns 1, 4, 6–9*
(shown as corner information)		***(statement on face)***

In these cases the corner mark (i.e. screw, nail) takes priority over the occupation and is thus treated as a corner mark.

If occupation is adopted as the new corner and is branded, this is also be quoted. For example:

N.E Cor SFP (↑ R)	*Cen RFP(↑2) at* *Stns 2, 3, 5–8*
(shown as corner information)	***(statement on face)***

9.15.5 Notations

See section 9.15.2.2 *Marks at new corners*, page 128.

Notations on face on the plan may be used in situations where:

- a survey establishes new corners
- space for clear presentation of information 'on face' is limited
- the markings of a number of corners have been treated in the same manner.

For example:

Peg placed at *Stns 3–9, 11–15*	*Survey Post branded (↑ R) placed at all new and original corners unless otherwise stated.*

On face presentation

Note: A mixture of ‘on face’ presentation (Figure 9-6) and tabulated presentation (Figure 9-7) must be avoided.

In this example, stations 6, 8, 10–13 and 23 are new corners.

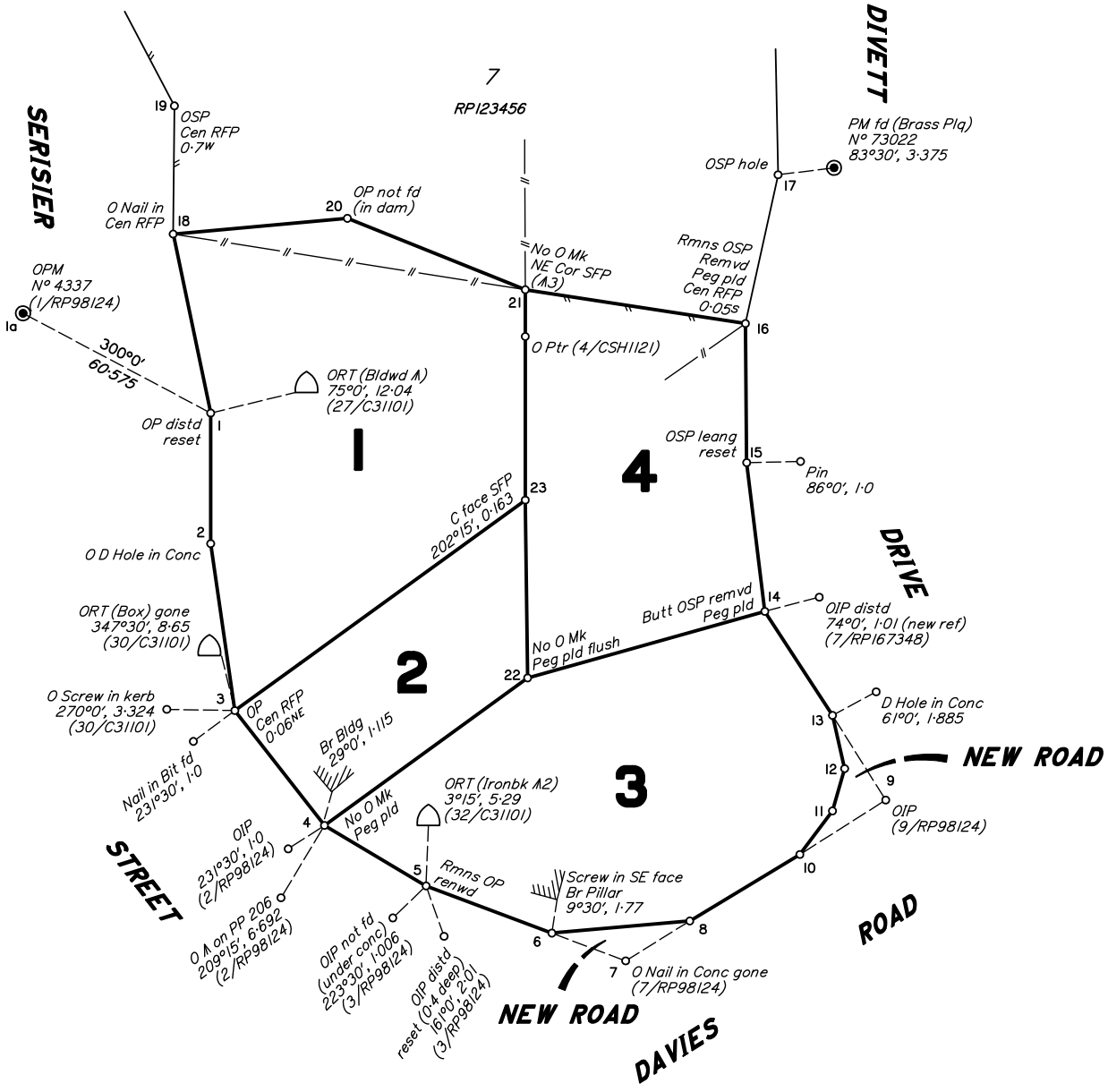
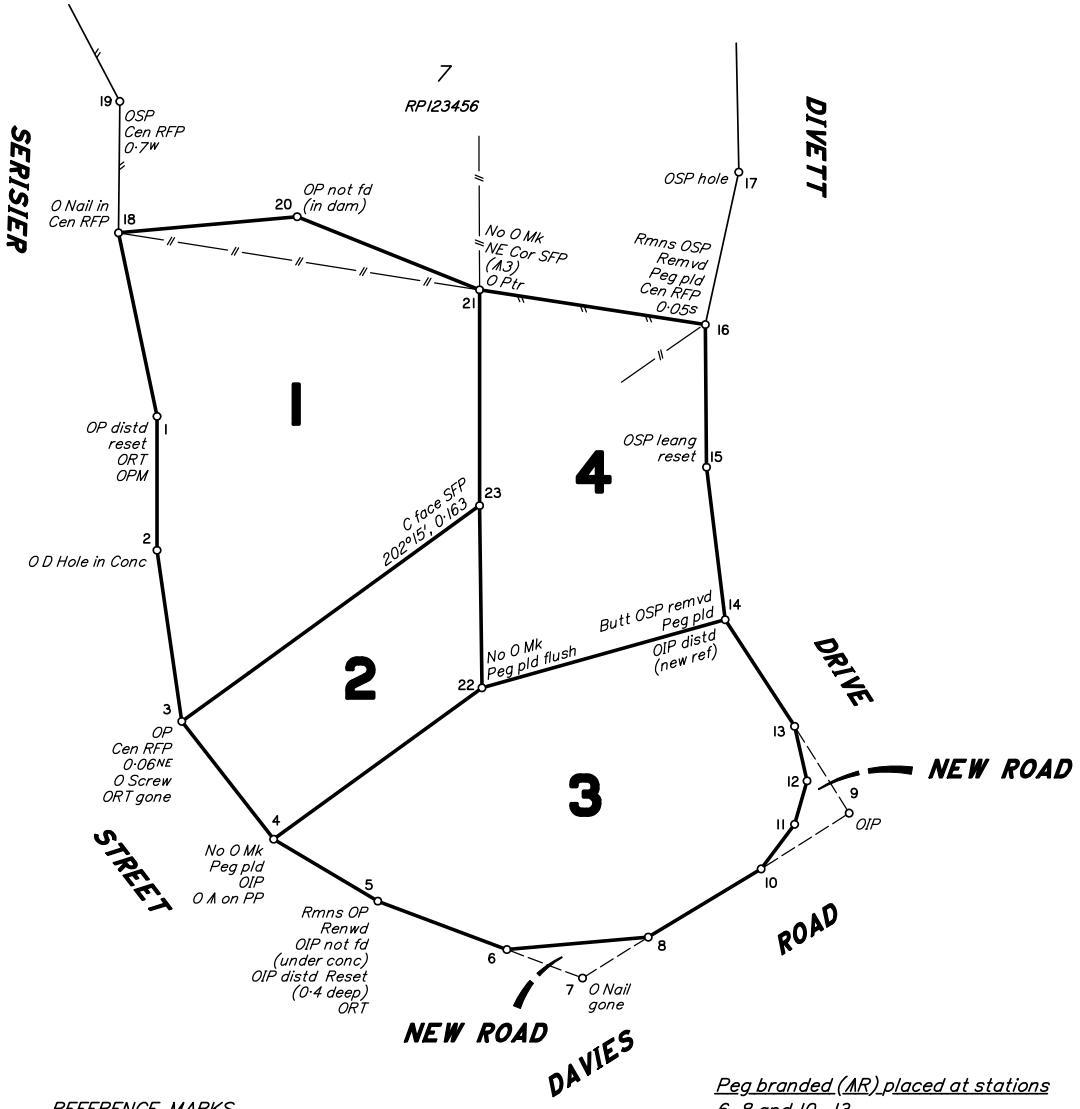


Figure 9-6 Example of on face presentation

Tabulated presentation

Note: For Tabulations, listings are consecutive, showing all marks referenced from the station. All reference marks for a station must be kept together and shown listed at their progressive distances from the station.

In this example, stations 6, 8, 10–13 and 23 are new corners.



Peg branded (MR) placed at stations 6, 8 and 10–13.

Peg placed at station 23.

REFERENCE MARKS

STN	TO	ORIGIN	BEARING	DIST
1	ORT (bldwd M)	27/C31101	75°0′	12·04
3	Nail Fd in Bit		231°30′	1·0
3	O Screw in kerb	30/C31101	270°0′	3·324
3	ORT (Box) gone	30/C31101	347°30′	8·65
4	OIP	2/RP98124	231°30′	1·0
4	Cor Br Bldg		29°0′	1·115
4	O M on PP 206	2/RP98124	209°15′	6·692
5	OIP not fd (under conc)	3/RP98124	223°30′	1·006
5	OIP distd reset (0.4 deep)	3/RP98124	161°0′	2·01
5	ORT (Ironbk M2)	32/C31101	3°15′	5·29
6	Screw in SE face Br Pillar		9°30′	1·77
7	O Nail in Conc gone	7/RP98124	at Station	
9	OIP	9/RP98124	at Station	
13	D Hole in Conc		61°0′	1·885
14	OIP distd (new ref)	7/RP167348	74°0′	1·01
15	Pin		86°0′	1·0
21	O Ptr	4/CSH1121	180°0′	4·023

PERMANENT MARKS

PM	ORIGIN	BEARING	DIST	NO	TYPE
1–OPM	1/RP98124	300°0′	60·575	4337	
17–PM fd		83°30′	3·375	73022	Brass Plq

TRAVERSES ETC

LINE	BEARING	DISTANCE
6–7	110°0′	5·0
7–8	60°0′	5·0
9–10	240°0′	6·035
9–13	330°0′	6·035

Figure 9-7 Example of tabulated presentation

9.16 Channel/drain

Standard under the SMI Act

See section 5.7 *Channel/drain areas*, page 94.

A channel or drain area must be given lot numbers and the words '(CHANNEL AREA/DRAIN AREA)' shown in brackets on the face of the plan but not in the description.

For an adjoining description, a channel/drain area is described with the lot/plan description and '(CHANNEL/DRAINAGE AREA)' in brackets on the face of the plan.

9.17 Datum

Guideline under Standard 3.24 Meridian

See section 3.24 *Meridian*, page 48.
See section 9.32 *Meridian*, page 143.

Datum is no longer a requirement on plans, but it may be shown.

9.18 Descriptions in title block

Information

See section 3.8 *Cancelling clause*, page 19.
See section 3.17 *Description of parcels*, page 31.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.8 'Parcels to be described'.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.8.1 'Description of parcels'.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.8.2 'Lots'.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.9 'Plan description and cancelling clause'.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.10 'Cancelling clause containing reference to unallocated State land'.

9.18.1 Primary estate

9.18.1.1 General

See section 10.2.1 *Creation of roads in freehold land*, page 154.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.9 'Plan description and cancelling clause'.

9.18.1.2 Common property

See section 9.3.4 *Adjoining building units or group titles plans*, page 121.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 11.3 'Description of common property'.

9.18.1.3 Unallocated State land (USL)

See section 3.41 *Unallocated State land (USL)*, page 70.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.10 'Cancelling clause containing reference to unallocated State land'.

9.18.2 Secondary interest

See section 3.27 *New lot boundaries intersecting registered secondary interests*, page 49.
See section 7.3.2 *Leases for part of the land only*, page 106.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.9 'Plan description and cancelling clause'.

9.18.2.1 General

See section 50(d) of the *Land Title Act 1994*.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.8 'Parcels to be described'.

9.18.2.2 Use of 'proposed'

See section 83A of the *Land Title Act 1994*.
See section 364 of the *Land Act 1994*.

9.18.2.3 Examples

Guideline under Standard 3.8 Cancelling clause

The following examples of descriptions in title blocks use 'Zzz' as a generic term, and it is to be replaced by the appropriate secondary interest term for your survey (e.g. Emt).

Where a secondary interest is to be created in an existing lot:

Zzz A in Lot 1 on RP123456

Subdivisions with secondary interests in the new lots:

Lots 1 to 5 and Zzzs B, J & E in
Lots 3, 4 & 5 respectively
Cancelling Lot 1 on RP123456

Secondary interests in common property in a community titles scheme:

Zzzs B, J & E in Common Property of
<Scheme Name> Community Titles Scheme <CTS Number>
(CP on BUP1234)

Secondary interests in common property in a community titles scheme where the common property was created on different plans:

Zzzs B, J & E in Common Property of
<Scheme Name> Community Titles Scheme <CTS Number>
(CP on SP123456, SP134562 and SP154328)

Note: Where the common property was created on multiple plans the common property must be shown in the lot allocation table with the secondary interests allocated.

Subdivisions with secondary interests created in adjoining lots:

Lots 1 and 2
Cancelling Lot 1 on RP123456 and of
Zzz G in Lot 2 on RP45678

Resurveys with a secondary interest in the same parcel:

Lot 24 being a Resurvey of Lot 24 on RP123456
and of Zzz E in Lot 24
Cancelling Lot 24 on RP123456

Resurveys with a secondary interest in an adjoining lot:

Lot 217 being a Resurvey of Lot 217 on RP123456
Cancelling Lot 217 on RP123456
and of Zzz G in Lot 218 on RP123456

Secondary interest over a lease of part of land (e.g. easement):

Zzz A in Lease A on SP123456

Note: Also acceptable is *'Zzz A in Lease A on SP123456 in Lot 23 on SP117654'*, where Lot 23 is the parent parcel. This extended description may assist in CISP entry of the plan.

Secondary interest over undescribed balances:

Zzz A in Lot 1 on RP121345

(where Lot 1 on RP 121345 is the original parcel)

Secondary interest over unallocated State land:

Zzz A in Lot 543 on USL3453

9.19 Description of country

Guideline under Standard 9.55 Plan presentation

See section 9.55 *Plan presentation,* page 153.

Description of country may be shown for surveys in rural areas.

9.20 Diagrams

Guideline under Standard 9.55 Plan presentation

See section 9.35 *Not to scale,* page 145.
See section 9.55 *Plan presentation,* page 153.

Diagrams should be presented as follows (see Figure 9-8):

- refer to the diagram on the face of the plan, (e.g. ***SEE DIAGRAM A***)
- repeat the lot number on the diagram
- if roads and streets are subject on plan, show hairline on diagram
- enclose all diagrams in a border to separate them from the rest of the plan (straight lines preferred)
- draw diagrams to scale if possible
- where more than one diagram is shown on the one plan, diagrams should be labelled consecutively (A, B, C, etc.).

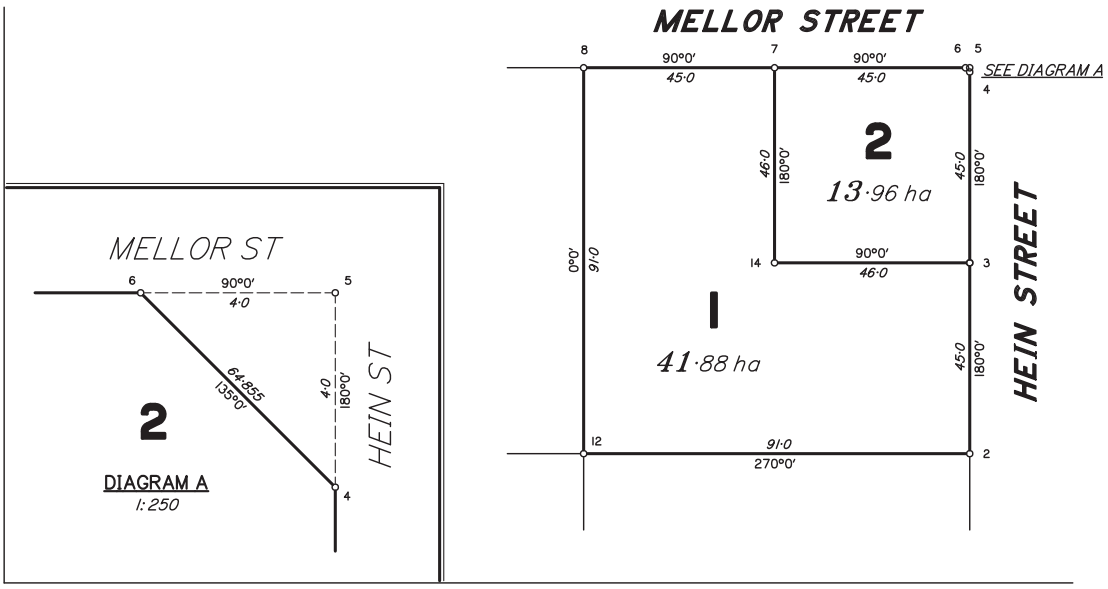


Figure 9-8 Example of a Diagram

Note: 6–5 and 5–4 may be tabulated as required.

9.21 Distances

Standard under the SMI Act

See section 3.18 *Dimensions*, page 33.
See section 9.8 *Calculated lines*, page 124.
See section 9.33 *Metric numeration*, page 144.
See section 9.37 *Original dimensions*, page 145.

Distances are shown sloping on the face of the plan and in all tabulations. When they are shown on the face, they are always shown inside the parcel unless the distance is arrowed in.

9.21.1 Brackets

When intermediate distances are shown, the 'through' distance is to be shown with brackets.

Station numbers may be used for clarity.

9.22 Fences

Guideline under Standard 9.6 Bearings

See section 9.6 *Bearings*, page 122.

Type of fence to be shown if possible (e.g. 2P1B, Netting)

'Reads' bearings may be shown on fences that exist on previous boundary lines.

If useful, 'Reads' bearings may be shown on internal fences.

Connections across roads to fence lines to be treated as shown in Figure 9-9.

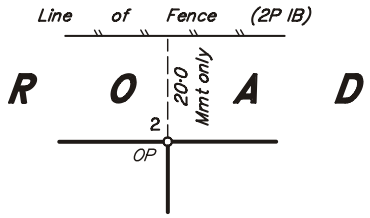


Figure 9-9 Example of connection to fence across a road

9.23 Forest entitlement areas (FEAs)

Information

Return to section 5.9 *Forest entitlement areas (FEAs)*, page 94.
See section 2.9 *Reservations in title*, page 6.
See section 3.6.4 *Multiple line areas*, page 15.
See sections 26B and 26C of the *Land Act 1994*.

9.24 Ink

Standard under the SMI Act

See section 9.55 *Plan presentation*, page 153.

All plans within the definition of the *Survey and Mapping Infrastructure Act 2003*, submitted to the department or lodged with a registering authority for registration, must be drawn in **black**. The ink used for drafting, signing (black ink only), amending and noting plans must be of a permanent and waterproof variety. Biros and felt pens etc. will not be considered acceptable.

9.25 Insets

Guideline under Standard 9.55 Plan presentation

See section 9.20 *Diagrams*, page 138.
See section 9.55 *Plan presentation*, page 153.

The use of diagrams for plan presentation is preferred over the use of insets.

9.26 Lease plans

Information

See chapter 7 Leases, page 105.
See the *Land Title Practice Manual (Queensland)*, clause 7-2205.

9.27 Line pegs

Standard under the SMI Act

See section 3.23 *Marking*, page 42.
See section 9.50 *Tabulations*, page 150.

When survey records are not lodged, new line pegs must be shown on the plan.

Placement of line pegs must be indicated by one of the following methods (see Figure 9-10 to Figure 9-12).

Statement

Line Peg placed at intervals of 200·0

from Stns 1, 3, 6, 12 & 15

Figure 9-10 Example – line pegs statement

Tabulation

LINE PEGS

STN	*BEARING*	*DIST.*
2	*180° 42′*	*203·53*
	180° 42′	*406·22*
	180° 42′	*600·3*
5	*272° 33′*	*201·42*
	272° 33′	*400·63*

Figure 9-11 Example – line pegs tabulation

On face on the plan

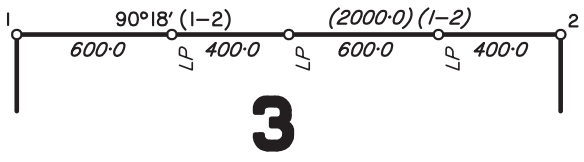


Figure 9-12 Example – line pegs on face

9.27.1 Original line pegs

Show original line pegs as ‘OLP’ on the face of the plan.

Measured distances shown in survey records which serve to fix the position of an OLP are to be shown on the face of the plan.

About distances must not be shown.

Note: If line pegs are not shown on the plan, survey records showing the position of these pegs must be lodged.

Kilometre pegs are treated in the same manner as line pegs. If branded, indicate ‘on face’ or tabulate.

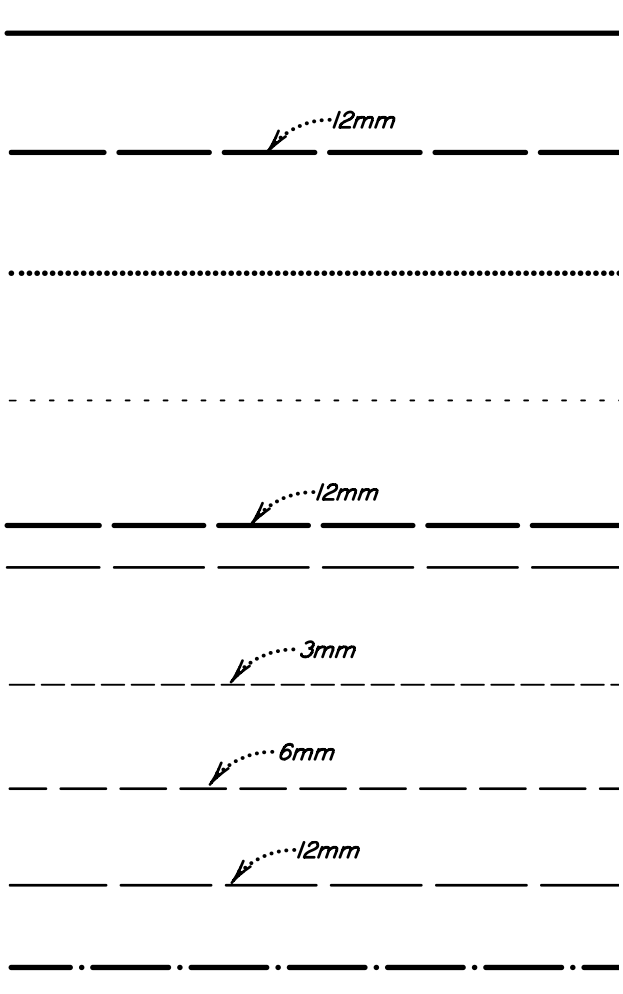
9.28 Linework

Guideline under Standard 9.55 Plan presentation

See section 9.55 *Plan presentation*, page 153.

The line styles traditionally used on survey plans (see Figure 9-13) enable certain survey information to be presented clearly and unambiguously and therefore their use is a way of meeting the requirements of section 9.55 *Plan presentation*.

Note: Boundaries of adjoining land are the same style as boundaries of subject land but at a reduced thickness.



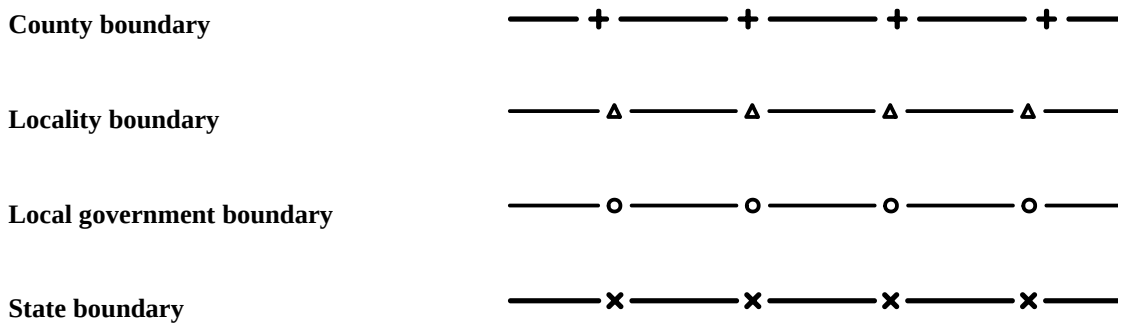


Figure 9-13 Example of line styles shown on a survey plan

The above is a recommended format for line thickness.

Line length and thickness may be varied if clarity of plan will benefit.

9.29 Locality

Standard under the SMI Act

See section 2.3 *Administrative boundaries – State, local government, and locality,* page 5.
See section 9.28 *Linework,* page 141.

Locality must be completed on the front of the survey plan. The correct locality name may be found from SmartMap.

If there is more than one locality intersecting or directly adjoining any of the subject parcel or parcels, each locality must be shown on the front of the plan and plotted on the face of the plan. Refer to section 9.28 *Linework,* for locality boundary. No allocation of localities is required.

9.30 Lots

Guideline under Standard 3.17 Description of parcels

See section 3.17 *Description of parcels,* page 31.
See the *Registrar of Titles Directions for the Preparation of Plans,* Direction 8.3 'Lot numbers'.
See the *Registrar of Titles Directions for the Preparation of Plans,* Direction 9.4 'Lot numbers'.
See the *Registrar of Titles Directions for the Preparation of Plans,* Direction 10.3 'Lot numbers'.

Having regard to the lot identification on marks from previous (or original) surveys, it is recommended that the lot number for the balance of a lot or for an amended lot should retain the original numerical identifier, and consequently be in agreement with the marks on the ground. This recommendation does not extend to the balance lot in a staged development.

The *Registrar of Titles Directions for the Preparation of Plans* contains specific requirements for lot numbering on standard format plans (Direction 8.3), building format plans (Direction 9.4) and volumetric format plans (Direction 10.3).

9.31 Measurement only

Guideline under Standard 3.18 Dimensions

See section 3.18 *Dimensions,* page 33.

Show 'measurement only' as required on the face of plan or tabulated in the 'Traverses, etc.' table. Measurement only may be abbreviated to 'mmt only'.

9.32 Meridian

Guideline under Standard 3.24 Meridian

See section 3.24 *Meridian,* page 48.
See section 3.28 *Permanent survey marks and connection to datum,* page 50.
See Figure 9-6 and Figure 9-7 following section 9.15 *Corner information*.

9.32.1 Meridian from previous plan

Where the meridian is referenced to a previous plan, and no reference to Map Grid of Australia (MGA), Australian Map Grid (AMG), or County Arbitrary Meridian (CAM) is known, then the plan number only is required in the meridian box.

Where a previous or adjoining plan has a reference to MGA or AMG or CAM, the meridian box should be completed as follows:

MGA Zone 55 *vide WD4829*	BN582 *– add 5°48' for* *MGA Zone 55* *vide RP801576*	*CAM* *vide SL1234*	*CAM – add 7°15' for* *MGA Zone 56* *vide SP123456*

Detail is generally shown in the meridian box; however, where space is limited, the meridian information should be shown directly above the title block. For example:

Meridian: Add 6°11' for MGA Zone 56 vide Plan W31639

9.32.2 Meridian by observation

Plans may be related to MGA by using previous plans, astronomical (sun or star) observations, connection to continuously operating reference stations (CORS), or connections to coordinated permanent survey marks.

The meridian box may be completed by reference to MGA and the observation technique. For example:

MGA Zone 56 vide CORS; *MGA Zone 56 vide Sun Obs*; *MGA Zone 56 vide PSMs*

Where the survey is connected to datum and the meridian differs from the existing MGA meridian of the underlying plan, a meridian table may be necessary, and the meridian box is completed with:

MGA Zone 56 vide meridian table

The meridian table should be in the form of:

MERIDIAN TABLE

Line	***Plan Bearing***	***MGA Zone 56 Bearing***
PM43651 to PM43562	*145°25'25"*	*145°25'25"* *vide SCDB*

Where permanent survey marks are used to obtain meridian, for the presentation of the PSMs refer also to the connections to permanent survey marks as presented in Figure 9-6 and Figure 9-7 at the end of section 9.15 *Corner information*, and if required, the MGA coordinates table as shown in section 3.14.3 *Coordinates of cadastral corners*.

9.33 Metric numeration

Standard under the SMI Act

See section 3.6 *Areas,* page 14.
See section 9.21 *Distances,* page 139.
See section 9.37 *Original dimensions,* page 145.

The symbol ‘m’ must not be shown following a number for length. For example:

20·115 **not** *20·115 m*

The decimal point is to be prominently shown at the mid height of the figures where possible.

Numbers should be grouped in threes right or left from the decimal point, and a space should be used instead of a comma. For example:

65 093·762 **not** *65,093·762*

However, except in tabular work (e.g. coordinates), the space may be omitted in groups of only four figures. For example:

4076·3012

A space should be left between the numeral and the unit or unit symbol. For example:

2076 m^2 **not** *2076m^2*

5·273 ha **not** *5·273ha*

No full stops should follow symbols.

9.33.1 Use of zeros

Where the figure is less than one, use a zero before the decimal point. For example:

0·745 **not** *·745*

A zero must not be shown as the last character to the right of the decimal point, except for whole numbers. For example:

4·0 or 51·2 or 67·53 **not** *4·00 or 51·20 or 67·530*

However, when showing (1) road widths or (2) areas, the following procedure is preferred. For example:

ROAD 60 WIDE **not** *ROAD 60·0 WIDE*

12 ha **not** *12·0 ha*

9.33.2 Rounding

When rounding to fewer digits than the total number available, the following procedure must be adopted.

Where the digit immediately following the last digit to be retained is less than 5, that digit should be left as is. For example:

7·621 48 to four digits = 7·621

When the digit immediately following the last digit to be retained is exactly 5 or greater, that digit should be increased by one. For example:

4·627 5 to four digits = 4·628

4·627 51 to four digits = 4·628

9.34 North point and data orientation

Standard under the SMI Act

See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.12 'North point'.

Each plan must show a North point and be oriented in accordance with the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.12 'North point'.

9.35 Not to scale

Standard under the SMI Act

See section 9.20 *Diagrams*, page 138.
See section 9.25 *Insets*, page 140.
See section 9.44 *Scale of plans*, page 148.

Diagrams drawn not to scale should be used with discretion. Show a break in the line for each lot affected. It is advantageous to plot this work to 'some scale' for sake of proportional representation. The wording 'not to scale' is to be shown on appropriate line or lines.

9.36 Offsets

Guideline under Standard 3.23 Boundary marking

See section 3.23 *Marking*, page 42.
See section 11.1 *Alignments*, page 160.

Offsets are not shown on the plan, in normal circumstances.

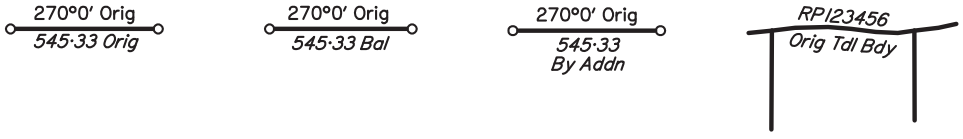
9.37 Original dimensions

Standard under the SMI Act

See section 3.9 *Certification by surveyor*, page 19.
See section 3.11 *Compiled plans and boundaries*, page 24.
See section 3.18 *Dimensions*, page 33.
See section 9.14 *Conversions*, page 126.
See section 9.33 *Metric numeration*, page 144.
See section 9.53 *Watercourses—tidal and non-tidal*, page 151.

Original dimensions are shown with 'Orig' written in conjunction with each bearing and distance. Where every dimension on a sheet of a multiple sheet plan is compiled, it is acceptable to note the dimensions on that sheet as original by a prominent statement on face. For distances derived from original distances by subtraction, 'Bal' must be used. 'By Addn' must be used for additions. The terms 'Bal Orig', 'Bal by Addn', and 'Calc Orig' should not be used.

Subject parcels containing an original physical feature boundary must show the plan number of the most recent field survey of the boundary. The plan number is to be positioned along the feature to provide a link to the definition of the physical feature boundary at the time of the original survey. For example:



A statement indicating the origin of original compiled information (in accordance with section 3.9 *Certification by surveyor*) is shown in the form of:

> *Original information compiled from plans RP213546, CP808763 and MP10537 in the Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development.*

The word 'original' is not shown on plans prepared under section 18 of the Survey and Mapping Infrastructure Regulation 2024.

9.38 Original grants

Standard under the SMI Act

Where a new lot on a plan of subdivision affects more than one original grant, the original grant boundaries must be accurately plotted on the plan as broken hairline line where they are not coincidental with a boundary. The original grant numbers (e.g. Portion 23, Section 25, Suburban Allotment 17) must be noted in a fine dotted style.

9.39 Plan formats

Information

See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.7 'Format to be noted'.
See the *Registrar of Titles Directions for the Preparation of Plans*, Part 8 'Standard format plans'.
See the *Registrar of Titles Directions for the Preparation of Plans*, Part 9 'Building format plans'.
See the *Registrar of Titles Directions for the Preparation of Plans*, Part 10 'Volumetric format plans'.
See the *Registrar of Titles Directions for the Preparation of Plans*, Part 20 'Explanatory plans'.

9.40 Plan forms

Information

See the *Registrar of Titles Directions for the Preparation of Plans*, Part 3 'Plan forms'.

9.41 Plan types

Information

See section 11.7 *Historical plan information,* page 161.

The standard plan form (prefix SP commencing at SP100000) commenced in July 1997 and is used for all surveys.

An instrument, as defined under section 4 of the *Land Title Act 1994*, includes a plan of survey (see Table 9-2).

Table 9-2 Current plan types

Freehold plan/State land action plan		
Prefix	**Type of plan**	**Other information**
SP	Survey plan	Standard plan form
IS	Identification survey	Standard plan format
AP	Administrative plan	Used for administrative actions such as permits, licences and various actions involving USL.
MP	Mining plan	See the Survey requirements for mining tenures <www.resources.qld.gov.au/__data/assets/pdf_file/0003/105744/survey-requirements-mining-tenure.pdf>

Within the department plans pass through various stages before the action depicted on the plan can occur. During these stages, the plan status is indicated by the following terms (Table 9-3).

Table 9-3 Plan status stages

Plan status stages	
Status	**Notation**
Copy of survey plan submitted to the department	Deposited survey plan (DP)
Original survey plan lodged for registration with Titles Queensland	Lodged survey plan (SP)
Copy of survey plan not intended to proceed to registration	Deposited survey plan (DP) noted in CISP for no further action, or Redundant Catalogue, Red Cat or (RC) plan

9.42 Ranged only and Reads bearings

Guideline under Standard 9.6 Bearings

See section 9.6 *Bearings*, page 122.
See section 9.13 *Connections to distant points*, page 126.

Show ranged only and reads bearings as follows (Figure 9-14):

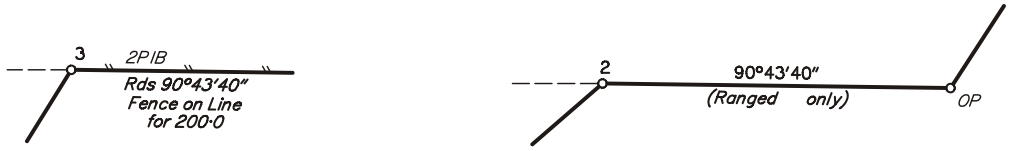


Figure 9-14 Example of ranged only and reads bearings

9.43 Roads

Standard under the SMI Act

Return to section 3.6.4 *Multiple line areas*, page 15.
See section 3.18 *Dimensions*, page 33.
See section 9.2 *Action statements*, page 119.
See section 9.8 *Calculated lines*, page 124.
See chapter 10 *Roads*, page 154.
See section 24 of the *Transport Infrastructure Act 1994*.

The present name of roads, streets and esplanades must be shown and be in accordance with the relevant local government nomenclature.

Refer to the Main Roads gazette for correct **highway** and **main road** name.

Esplanades are shown and treated in the same manner on plans as roads.

Dimensions (bearings and distances) are to be shown for internal roads as specified in section 3.18 *Dimensions*. The qualifying use of 'Orig' may be used where applicable.

Where an unsurveyed road without a shown width is declared prior to the commencement of the *Metric Conversion Act 1972* (1 Oct 1973), which amended the *Land Act 1962*, the road is taken to be 60.35m wide on the map or plan. Thereafter these roads without shown widths are taken to be 60m wide.

In some instances a plan will show a road with no width but with a reference to a departmental road case file (RC reference) or a government gazette (GG reference). In those instances, the information in the file or the gazette will be authoritative with regard to the width of the road.

Where only one side of an original road has been surveyed, and calculated dimensions are shown on the unsurveyed side, the lines may be shown as full lines and correctly labelled. Lines with calculated dimensions should show the word 'Calc' in the first instance and 'Orig' on successive plans.

For unsurveyed internal roads, the road is to be shown as a double dashed line, with the road width indicated (similar to the presentation for reserved road in section 9.43.1 *Reserved roads*).

For roads forming boundaries of subject parcels, when the opposite side is shown, the width must be indicated and the road plotted to scale. For example:

ROAD 60·35 WIDE

Note: By section 96 (b) of the *Land Act 1994*, the width of 60 metres applies to any road not shown on the lease or the plan. This is different to the width that was stated under the *Land Act 1962*.

Information

Under section 24 of the *Transport Infrastructure Act 1994* the Minister has authority to declare, by gazette notice, a road or route, or part thereof to be a State-controlled road.

Unless otherwise specified in a declaration, the width of a State-controlled road that passes through a State reserve, State forest, timber reserve, vacant State land, or pastoral holding is 30 meters each side of the centreline of the trafficked route. Refer to section 24(5) of the *Transport Infrastructure Act 1994*.

For surveys involving State-controlled roads or local government roads, surveyors should contact the Department of Transport and Main Roads or the relevant local authority about any specific requirements.

9.43.1 Reserved roads

Reserved roads and reserved esplanades, either surveyed or unsurveyed, are shown on the face of the plan in a specific location and are also shown as being excluded from the parcel on the face of the plan (see Figure 9-15)

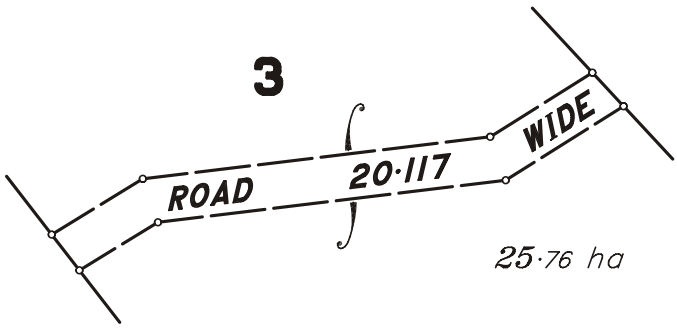


Figure 9-15 Example of a reserved road

9.44 Scale of plans

Standard under the SMI Act

See section 9.35 *Not to scale*, page 145.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.14 'Scales'.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 9.12 'Level diagrams'.

Plans must be drawn accurately to a scale that will allow all details and annotations being clearly shown on an A4 second-generation copy of the original. This requirement should assist in determining the selection of the appropriate plan scale (see Table 9-4).

A complete plot of the subject lot or lots is drawn on the plan in an uninterrupted manner to the scale as shown in the title. A scale bar is to be shown on plans in accordance with the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.14 'Scales'.

Plans and diagrams are to be drawn at one of the following scales, or multiples to the power of 10 thereof.

Table 9-4 Plan scales

Plan scales			
1:1	1:2	1:4	1:7·5
1:1·25	1:2·5	1:5	1:8
1:1·5	1:3	1:6	

If required, diagrams may be drawn ‘not to scale’ for clarity.

9.45 Secants

Standard under the SMI Act

See section 9.28 *Linework*, page 141.
See section 9.52 *Traverses*, page 150.

Dimensions of secants are shown ‘on face’ or tabulated in the ‘Traverses, etc.’ table.

9.46 State boundary

Guideline under Standard 5.4 Border surveys (State border of Queensland)

See section 2.3 *Administrative boundaries – State, local government, and locality*, page 5.
See section 5.4 *Border surveys (State border of Queensland)*, page 92.
See the *Queensland Boundaries Declaratory Act 1982*.

Show State boundaries as shown in the example in Figure 9-16:

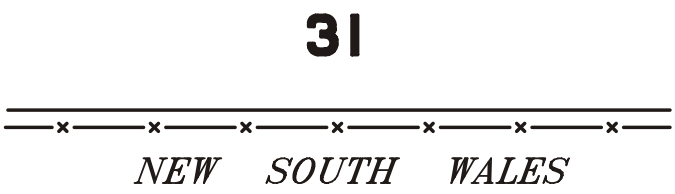


Figure 9-16 Example of State boundary

9.47 Station numbers

Guideline under Standard 9.55 Plan presentation

See section 9.55 *Plan presentation*, page 153.

Station numbers or letters may be shown on the plan to describe survey lines and to qualify action statements and other ‘on face’ statements.

Station numbers are to be shown upright in as simple a format as possible (i.e. 1, 2, 3, with la, 1b, etc. for secants and close proximity work only). Station letters (i.e. A, B, C, etc) may be used to qualify action statements involving unsurveyed corners (e.g. closed road).

9.48 Symbols

Guideline under Standard 9.55 Plan presentation

See section 9.55 *Plan presentation*, page 153.
See Appendix D, *Symbols*, page 183.

The symbols traditionally used on survey plans (shown in Appendix D) enable certain survey information to be presented clearly and unambiguously and therefore their use is a way of meeting the requirements of section 9.55 *Plan presentation*.

9.49 Surveys in strata

Information

See section 11.8 *In strata*, page 163.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 10.2.3 'Restricted or "in strata" lots'.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 6.5 'Easements limited vertically'.

9.50 Tabulations

Standard under the SMI Act

See section 3.18 *Dimensions*, page 33.
See section 9.15 *Corner information* Figure 9-7, page 126.
See section 9.34 *North point and data orientation*, page 145.
See section 9.52 *Traverses*, page 150.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.12 'North point'.

When a plan has been 'rotated', tabulations are to be rotated likewise so as to facilitate easy of reading of the plan.

With the ability to use multiple sheets, boundary dimensions must not be tabulated (except for the use of points tables on physical feature boundaries). Tabulation is acceptable to depict the location of line pegs.

9.51 Text styles

Guideline under Standard 9.55 Plan presentation

See section 9.55 *Plan presentation*, page 153.
See Appendix C, *Styles*, page 182.

For text, variable pen sizes, lettering heights, etc. are used to indicate the information in an unambiguous manner, attempting to demonstrate the guidelines contained within the pages of this manual.

The text styles traditionally used on survey plans (shown in Appendix C) enable certain survey information to be presented clearly and unambiguously and therefore their use is a way of meeting the requirements of section 9.55 *Plan presentation*.

9.52 Traverses

Guideline under Standard 3.23.1 Boundary marking

See section 3.23 *Marking*, page 42.
See section 3.37 *Survey reports*, page 64.
See section 9.8 *Calculated lines*, page 124.
See section 9.45 *Secants*, page 149.
See section 9.53 *Watercourses—tidal and non-tidal*, page 151.

Extraneous field traverse information is generally not shown. However, when traverse lines are shown, dimensions are shown on face or tabulated in the 'Traverses, etc.' table.

When traverse dimensions are tabulated, numerical order is preferred. For example:

TRAVERSES, etc.

LINE	*BEARING*	*DIST.*
1–2	*180° 07′*	*13·13*
3–4	*236° 43′ 30″*	*105·26*
5–5a	*355° 32′ 40″*	*20·117*

Where a traverse has been run to establish a new boundary along an **inaccessible area**, the traverse is shown in the normal manner and the boundary shown calculated.

9.53 Watercourses—tidal and non-tidal

Standard under the SMI Act

See chapter 4 *Physical feature boundaries* page 73.

Show the opposite bank of a watercourse if practicable. It is not always necessary to show information on the other side of watercourse forming boundaries (see Figure 9-17).

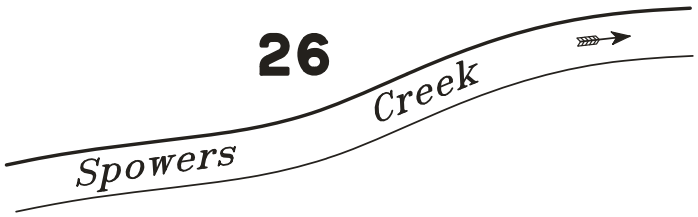


Figure 9-17 Example of the opposite bank of a watercourse

Distances on a boundary that terminate at a watercourse (see Figure 9-18) are to include distances to:

- post or peg
- traverse
- watercourse boundary (Ck, Riv, Tdl Bdy, etc.).

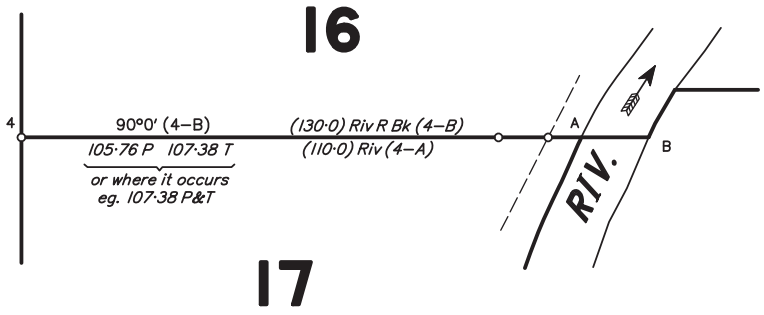


Figure 9-18 Example of a boundary terminating at a watercourse

For non-tidal watercourses, an arrow indicating ‘downstream’ **only** must always be shown.

For tidal watercourses, a double-headed arrow is to be shown to indicate that the stream is subject to tidal influence. A larger arrowhead should indicate the direction of downstream flow (see Figure 9-19).

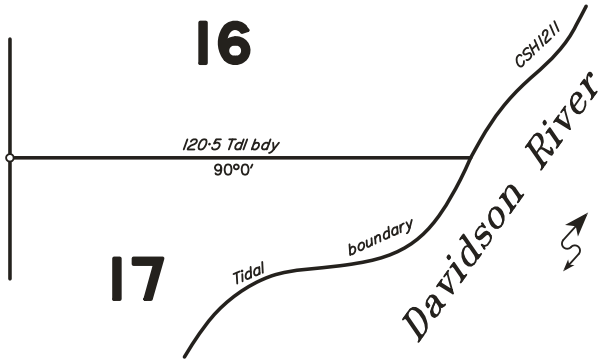


Figure 9-19 Example of arrow indicating direction of flow (tidal)

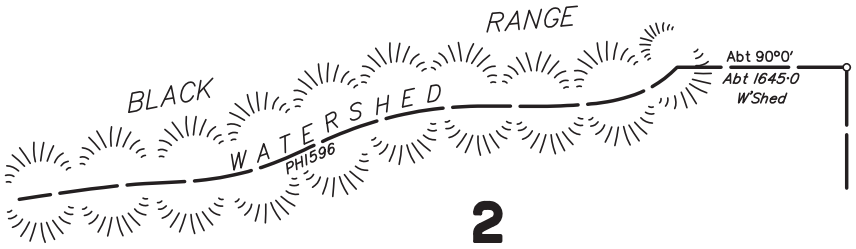
9.54 Watersheds

Guideline under Standard 3.26 Natural boundaries

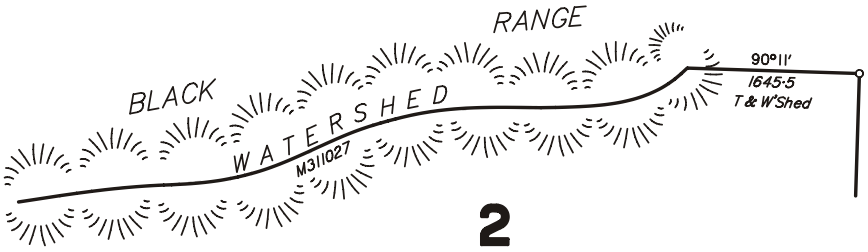
See section 3.26 *Natural boundaries*, page 49.
See chapter 4 *Physical feature boundaries*, page 73.
See section 9.12 *Compass survey*, page 125.

When compiling an existing ‘watershed’ boundary, the following guidelines apply (see Figure 9-20):

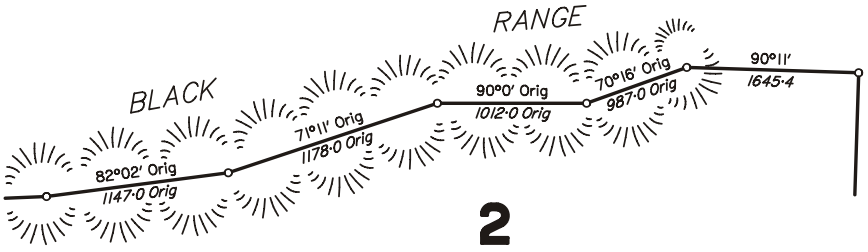
Unsurveyed watershed



Surveyed watershed



Surveyed watershed adopting traverse lines



(The word WATERSHED is not shown)

Figure 9-20 Examples of unsurveyed, surveyed, and traversed watershed boundaries

If traverse lines have been adopted as the boundary and corners have been marked, then right lines are shown.

Note : If in doubt as to which of the above methods is to be used, a search of the original tenure document should be made.

Relevant boundaries are labelled ‘compass survey’ as required.

9.55 Plan presentation

Standard under the SMI Act

See section 9.1 *Abbreviations*, page 119.
See section 9.19 *Description of country*, page 138.
See section 9.20 *Diagrams*, page 138.
See section 9.24 *Ink*, page 139.
See section 9.25 *Insets*, page 140.
See section 9.28 *Linework*, page 141.
See section 9.47 *Station numbers*, page 149.
See section 9.48 *Symbols*, page 149.
See section 9.51 *Text styles*, page 150.
See the *Registrar of Titles Directions for the Preparation of Plans*.

Plans should be capable of clearly and unambiguously conveying the survey information to any reasonable user of the plan. To achieve this, plans must be drafted in accordance with accepted presentation formats, use consistent abbreviations, linework, styles and symbols, and be capable of being imaged by mechanical or digital processes to produce a copy or a reduced size copy that is satisfactory to the department and registering authority.

Plans to be lodged in the Titles Registry are to be prepared in accordance with the Registrar of Titles Directions for the Preparation of Plans.

10 Roads

See section 2.9 *Reservations in title*, page 6.
See section 9.43 *Roads*, page 147.
See Glossary, page 166.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.9 'Plan description and cancelling clause'.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.10 'Cancelling clause containing reference to unallocated State land'.
See departmental policy *Land allocation: public purpose reservations SLM/2013/480*, <www.resources.qld.gov.au/?a=109113:policy_registry/public-purpose-reservations.pdf>.

10.1 Definition

Information

See section 93 of the *Land Act 1994*.

A road is land set apart from a primary estate in land (either an estate in fee-simple, leasehold or other State land) and is dedicated to public use. Roads, once dedicated, are vested in the State under the provision of section 95 of the *Land Act 1994*.

10.2 Creation of road

See section 3.6.5.2 *Dealing with multiple areas of road*, page 17.
See section 3.35.3 *Resumptions for road purposes*, page 61.
See section 6.7.3 *Road dedications over easements in all tenures*, page 104.

Road may be created under legislation such as the provisions contained in the *Land Act 1994* or the *Land Title Act 1994*.

10.2.1 Creation of roads in freehold land

Standard under the SMI Act

See section 3.35.3 *Resumptions for road purposes*, page 61.
See section 3.35.5 Resumptions for other purposes, page 62.
See section 6.7.3 *Road dedications over easements in all tenures*, page 104.
See section 9.18.1.1 *General*, page 136.
See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 4.8.2 'Lots'.

Road is created in freehold land under the provisions of sections 50(1)(a) and 51(2) of the *Land Title Act 1994*. The effect of these provisions being that new roads shown on plans are opened and dedicated for public use on the registration of the plan. Any affected secondary interests may need to be addressed prior to the lodgement of the plan.

Where a whole lot is to be opened as road, the lot may be dedicated as road by registration of a dedication notice (see section 54 of the *Land Title Act 1994)*. The dedication must be approved by the relevant planning body. Another method to dedicate land as new road under the provisions of the *Land Title Act 1994* is by registration of a plan of subdivision. Each parcel of land to be dedicated as road must be clearly shown as 'new road' on every sheet that depicts the new road. If more than one parcel is dedicated as new road on the plan, it is sufficient to show a total area of the parts. A total area is required on sheet 1 of the plan and should be shown in the form of:

Total Area of New Road 1·234 ha

A plan may be of new road only. For example:

Plan of New Road cancelling Lot 12 on RP123456

Pathways or lanes are not a prescribed community purpose for land under Schedule 1 of the *Land Act 1994*, and must be shown as 'new road' on a plan. Pathway or lane may be shown as incidental descriptors.

Alternatively, a lot may be surrendered to the State for subsequent dedication of the road in terms of

sections 327 and 94 of the *Land Act 1994*. It should be noted that section 327 of the *Land Act 1994* requires the Minister's approval. That approval will not be forthcoming without the written concurrence of all interested parties, in particular the authority with whom the new road is to be vested. (See the *Land Title Practice Manual (Queensland)*, clause 21-2290).

10.2.2 Creation of roads in leases, reserves, trust land and USL

Standard under the SMI Act

See section 3.11.5 *Compiled plan of large unsurveyed parcel*, page 27.
See section 9.2 *Action statements*, page 119.

Section 96 of the *Land Act 1994* clarifies, in lease land, when a road may be considered dedicated. See section 9.43 *Roads* regarding widths of unsurveyed roads.

Road is created in leases, reserves, trust land and unallocated State land (USL) under the provisions of section 94 of the *Land Act 1994*. Land may be dedicated as a road for public use by the registration of a dedication notice, or a plan of subdivision. Each parcel of land to be dedicated as road should be clearly shown as 'new road' on the face of the plan. For the relevant action statement refer to section 9.2.1 *Road opening*.

A plan may show new road only. For example:

Plan of New Road cancelling Lot 2 on AP123456

Where road is to be created in a reserve and the reserve contains a State lease that is affected by the road, the action can be completed on one survey plan (plan of area of new road and balance of the reserve parcel, and new lease alpha in the balance parcel).

10.2.3 Creation of roads in State forest or timber reserves

Standard under the SMI Act

Revocation actions are effected under section 32 of the *Forestry Act 1959*. Revocations for road and 'tourism' purposes **do not** require parliamentary approval.

Revocations are made by amendment to the Schedule (State forests) to the Forestry (State Forests) Regulation 1987 by the Governor-in-Council.

A plan is required to identify the area that is to come out of the State forest or timber reserve and is to become road. The plan must identify the area as a lot with a numeric descriptor. The surveyed status of the lot will be at least the same as the underlying parcel of State forest or timber reserve.

Once excluded vide amendment to the Schedule of the Forestry (State Forests) Regulation 1987, the land becomes USL. The area is then dedicated as road by the registration of the dedication document.

If a State lease administered under the *Land Act 1994* is currently registered over the area proposed to be excised, a signed surrender of the lease area involved must be obtained by negotiation from the lessee in the first instance. A plan is then produced to show the area to be excised and the new lease area (exclusive of the excised area). The lease must be partially surrendered prior to the partial revocation of the State forest or timber reserve.

Again, the dedication of the road and amendment of the lease would only take place **after** the State forest has been amended and the department has been advised.

10.2.4 Creation of roads in scheme land

Standard under the Land Title Act

See the *Registrar of Titles Directions for the Preparation of Plans*, Direction 12.3 'Part of Common property to be excised'.

Road may be created directly from lots and/or common property within a community titles scheme in the following circumstances:

- If the new road is to be directly created from part of the common property only and the area of new road does not affect any part of a building or structure on a building format plan, a plan of new road only cancelling part of the common property is required.
- If the new road is to be directly created from part of a lot only and the area of new road does not affect any part of a building or structure on a building format plan, a plan of subdivision creating a new lot and new road cancelling the lot is required.

Alternatively, the area of new road required may be created as a lot with a following action to dedicate and open the new road.

10.3 Closure of road

Standard under the SMI Act

Road closures are effected under the provisions of section 98 of the *Land Act 1994*.

There are several options to deal with closed road and the letter of offer from the department to the applicant will indicate the option to be adopted.

10.3.1 Addition to adjoining lot or lots

See section 3.10.4 *Permanently closing road*, page 22.
See section 9.2 *Action statements*, page 119.

10.3.2 Separate title

If it is intended to issue a separate title over the area of closed road, a plan showing the new lot is required. The separate title could be a lease or a deed of grant under the provisions of the *Land Act 1994.*

10.3.3 Temporary closure of road

Roads may be temporarily closed by issuing a road licence under section 103 of the *Land Act 1994*. A road licence may be subject to conditions (sections 103 and 104 of the *Land Act 1994*). The road licence area is to be defined on an Administrative plan (AP) and the licence area is defined as a secondary interest. The temporarily closed road is still dedicated road (a primary interest) and may be reopened by cancellation or surrender of the road licence (sections 105 and 106 of the *Land Act 1994*).

Temporarily closed road is to be shown as adjoining information as ‘road’ together with the secondary interest identifier. For example:

SMITH ROAD

Lot <alpha>

AP 1234

10.4 Simultaneous opening and closure of road

Standard under the SMI Act

See section 3.10.5 *Simultaneous opening and closure of road*, page 22.
See section 9.2.3 *Simultaneous road opening and closure*, page 120.
See section 9.43 *Roads*, page 147.
See sections 94 to 98 and section 109 of the Land Act 1994.

10.5 Existing roads

Standard under the SMI Act

See section 2.9 *Reservations in title*, page 6.
See section 3.6.4 *Multiple line areas*, page 15.
See section 4.2 *Surveying tidal and non-tidal water boundaries*, page 76.
See section 4.3 *Compiling tidal and non-tidal water boundaries*, page 77.
See section 9.43 *Roads*, page 147.

There were clear directions to surveyors regarding roads in the early settlement of the State. Extracts from the 1878 Directions to Surveyors:

> *When issuing instructions for the survey of lands for sale, the general direction of the main lines of communication affecting the locality should be ascertained, and the Surveyor directed to take such measures as may best preserve not only the main roads, but also those requisite for access to each separate portion, and the vacant Crown land beyond.*
>
> ...
>
> *Main roads which have not been previously surveyed should be measured and marked on both sides where they pass through portions; but secondary roads should only be measured on one side, and the opposite side marked at the angles by offsets across the road. Subordinate roads for access to only a few portions or limited areas should be measured and marked on one side only.*

Since 1st January 1963, there has been clear provisions in the Land Acts to deal with the dedication and opening of roads (currently, contained within sections 93 – 96 of the *Land Act 1994*). The pre-1963 Land Acts make little or no provision for the procedure to follow to dedicate a road.

In determining the status of roads (including in Miners' Homestead areas) that came into existence prior to 1 January 1963, the area shown as road in the following circumstances is classified as an area available for public use as a road:

- Where an instrument of lease or grant signed by the Governor bears a diagram showing a road, or bears a reference to any plan of survey, either of which clearly define road.
- Where a clearly defined road is shown on a sale litho which has not been withdrawn from sale.
- Where a Reserve has been declared by Order in Council and the plan of the Reserve clearly defines a road within or external to the reserved area.

10.5.1 Esplanades

It should be noted that an esplanade or reserve for esplanade under the Lands Acts is a "road" within the meaning of Section 93 of the *Land Act 1994*, irrespective of whether or not it is suitable for road purposes. Any dealings with an esplanade must therefore conform to the relevant sections of the Land Acts pertaining to roads.

The earliest type of reservation encountered is the reservation for esplanade. In the early days of the Colony, communication and transport was by sea and boat and in New South Wales from about 1824 onward it was customary to reserve a strip of land 100 feet wide above high water mark for esplanade purposes. The practice was confirmed by Government Order in 1828 and also a further Direction which required the Crown to reserve such a strip on the seacoast and along all tidal creeks, bays and harbours.

A deed of grant will disclose whether an esplanade is excluded from the grant or reserved from the grant. If it is excluded from the grant (see Title references 10315187, 10750134, 12075064 or 20371234), the esplanade is not a reservation under section 23 of the *Land Act 1994*. Accordingly, the subject lot/s will not show an exclusion for the esplanade. The landward side of the esplanade (the boundary of the lot) must be shown in subject style.

For an unmarked esplanade, the position of the esplanade is fixed at the time of alienation of the lot. The landward boundary of the esplanade is also fixed at the time of alienation, but remains curvilinear, irrespective of when the feature was surveyed, and is not subject to accretion or erosion (*McGrath v Williams* (1912) 12 SR (NSW) 477). The seaward boundary of the esplanade is subject to the doctrine of accretion and erosion.

If the esplanade is reserved from the grant, the grant will indicate that an area of the granted land is reserved for esplanade purposes to be taken at a time after the making of the grant. In this case, the tidal boundary must be shown in subject style, and the landward edge of the reserved esplanade must be shown as curvilinear with a dotted line style. The area is to be shown as a three line area as the reserved esplanade is a reservation under section 23 of the *Land Act 1994*. There is no requirement to calculate the landward edge of the esplanade. The width of the reserved esplanade must be shown.

When surveying any part of the landward side of an esplanade, the esplanade boundary is curvilinear. The measurements between the surveyed points must be shown in an 'Esplanade points table' in the same manner as for other curvilinear boundaries. When marking the landward side esplanade boundary, the marks placed are in effect line pegs and must be shown in accordance with section 9.27 *Line pegs*.

When depicting a compiled part of the landward side of an esplanade, in lots with a calculated area, an esplanade points table must show the dimensions between points on the esplanade boundary that are used to calculate the area. The dimensions must be shown as 'Calc'.

Surveying the landward side of the esplanade

Note: Survey records may be required to support the calculation of the esplanade boundary points (see Figure 10-1).

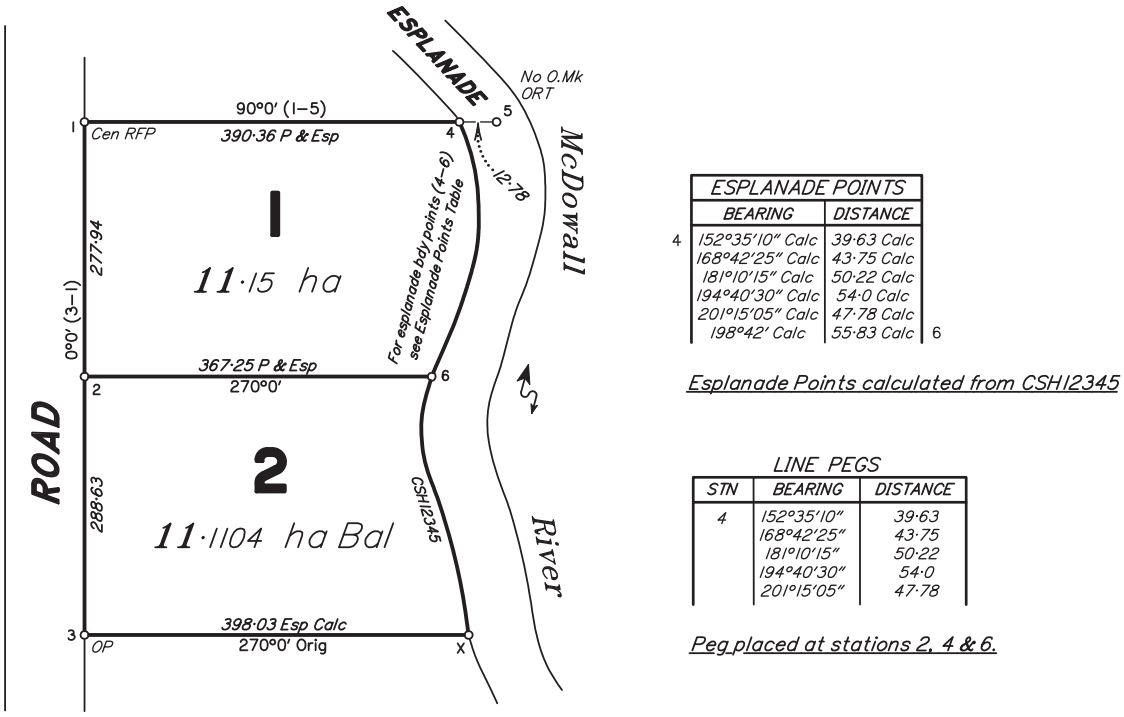


Figure 10-1 Example of surveying the landward side of an esplanade

Compiling the landward side of the esplanade

Note: Survey records may be required to support the calculation of the esplanade boundary points (see Figure 10-2).

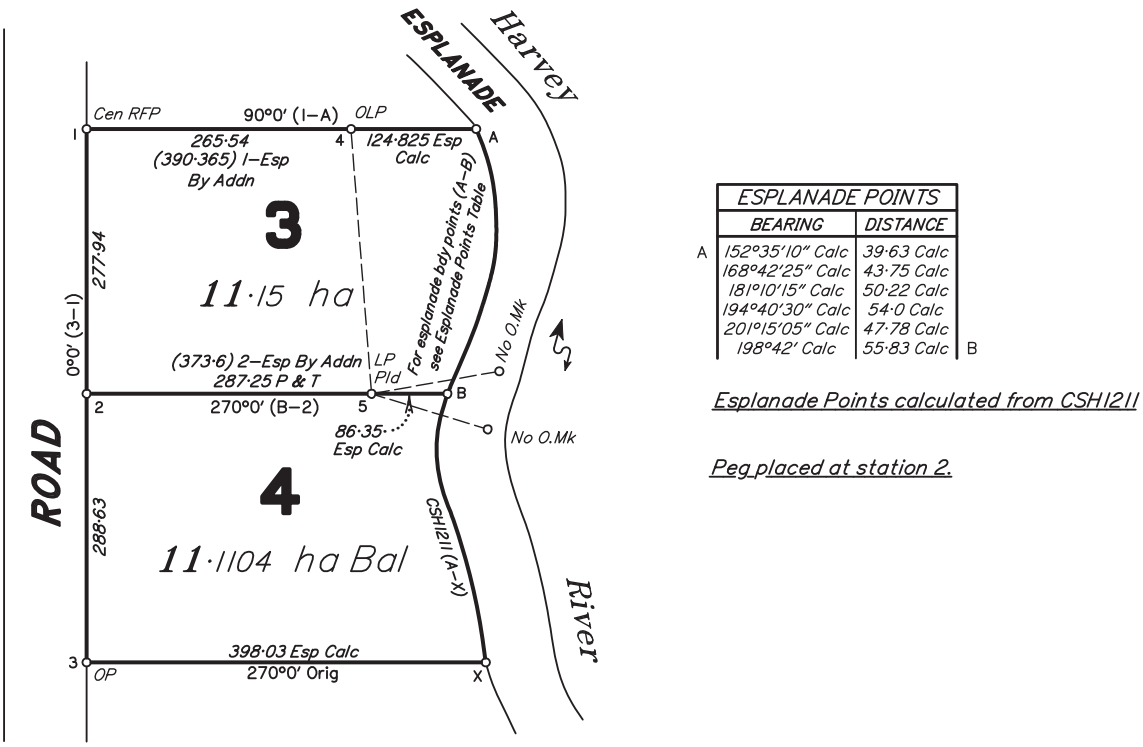


Figure 10-2 Example of compiling the landward side of an esplanade

10.5.2 Reserved roads and reserved esplanades

A deed of grant or lease may refer to a surveyed road or esplanade, and/or a reserved road or reserved esplanade, being excluded from the deed of grant or lease.

A reserved road, or reserved esplanade, is not a reservation in title as it is a road for public use, the same as a surveyed road. Referring to the classification of roads under the 1878 Directions and the practice of marking subordinate roads on one side only, it was the custom to refer to these roads also as "reserved roads" in the deed of grant or lease. The 1890 Directions for the Guidance of Surveyors (Clause 103) in referring to plans stated:

> *"Reserved roads through portions are to be represented by black lines, the surveyed side being indicated by a firm line; the unsurveyed side (if both sides are not surveyed) by a broken line; the lengths and bearings are to be written along the surveyed side and the width of the road is to be written along it thus – "Reserved road one chain wide" – existing tracks may be shown in light dotted lines".*

As reserved roads and reserved esplanades have been dedicated for public use, when dealing with an application to "purchase" an area in a reserved road, the application is for a road closure.

Existing reserved roads or reserved esplanades are shown on the face of plans as either surveyed or unsurveyed, in a specific ("fixed") location and are excluded from the lot area.

The position of the reserved road and reserved esplanade is fixed at the time of alienation of the lot. The landward boundary of the reserved esplanade is fixed at the time of alienation, but remains curvilinear, irrespective of when the feature was surveyed, and is not subject to accretion or erosion (McGrath v. Williams (1912) 12 SR (NSW) 477) The seaward boundary of the reserved esplanade is subject to the doctrine of accretion and erosion.

Reserved roads and reserved esplanades cannot be burdened by easements, secondary interest leases, profits a prendre, etc.

11 Historical information

Information

The information in this chapter describes the operation of legislation which has since been repealed, but may have ongoing relevance to the definition of boundaries, or to dealings with particular categories of land.

11.1 Alignments

See section 9.5 *Alignment offsets*, page 122.
See section 9.36 *Offsets*, page 145.
See *Law relating to land boundaries and surveying*, AG Brown, appendixes A and B.

11.1.1 Declared alignments

Declared alignments become boundaries. The declaration was made by the Minister for Local Government under section 35(8)(7) of the *Local Government Act 1936*

The provisions referred to above were repealed under the *Local Government Act 1993*.

These plans are recorded in departmental systems with a plan prefix of DA.

11.1.2 Official alignments

An official alignment, not being a declared alignment indicates a building line only, which may or may not coincide with the property boundary.

11.2 Amalgamations

See section 5.2 *Amalgamations*, page 92.

Plans of amalgamation outside the Brisbane City Council lodged prior to 25 May 1985 did not require local government consent. The *Land Title Act 1994* was amended in 1997 to include section 50(h), and consequently remove the need for any plans of amalgamation to be approved by a local government.

11.3 Barrier fences

Note: The *Barrier Fences Act 1954* was repealed by the *Rural Lands Protection Act 1985*.

Under section 180 of the *Rural Lands Protection Act 1985* (repealed) the Minister could issue an order for the establishment and maintenance of barrier fences. Section 202 provided for the establishment of a ring fence by an Order-in-Council. These orders were endorsed on the title to which they related.

For an order under the *Barrier Fences Act 1954*, see RP165728.

In general, orders under the *Rural Lands Protection Act 1985* are no longer enforced since the department or the local government undertake the maintenance of the fences.

When lots, which were subject to an order under section 180 of the *Rural Lands Protection Act 1985*, were subdivided, the plan of subdivision was submitted to the local district office of the department. The district office arranged for certification by the Minister's delegate whether the new lots were subject to the order.

Allocation, if required, was similar to that for a reservation in title.

Note: The *Rural Lands Protection Act 1985* was repealed by the *Land Protection (Pest and Stock Route Management) Act 2003*.

Section 324 requires that an endorsement made in the register kept under the *Land Act 1994* or the *Land Title Act 1995* under section 185(1) of the *Rural Land Protection Act 1985* must be removed.

11.4 Declared catchment areas

See section 5.6 *Catchment areas,* page 94.

Surveyors undertaking surveys in declared catchment areas would be aware of a requirement for the department's approval of plans of subdivision in these areas. The department administering the *Water Act 2000*, as a concurrence agency, holds powers over subdivision and certain land uses within declared catchment areas.

On 1 October 2000, the catchment areas provisions of the *Water Act 2000* commenced. These are found in Chapter 2, Part 7 of the Act. Under the provisions it is possible to make a regulation that both declares an area to be a declared catchment area (DCA) and regulates the use of land in the DCA. The provisions of the *Water Act 2000* provide the same powers that are provided in section 27 of the *Water Resources Act 1989*.

Because of the saving of the Water Resources (Areas and Boards) Regulation 2000, the DCAs that existed on 1 October 2000 continue to exist. However, the chief executive's powers over land use in the DCA are not found in that regulation and have expired.

11.5 Commonwealth titles

See section 2.5 *Commonwealth titles,* page 5.

11.5.1 Background

See the Real Property (Commonwealth Titles) Act 1924.
(Note: Section 207 of the Land Title Act 1994 repealed this Act.)

Lands such as 'post and telegraph reserves' and some 'rifle range reserves' were not part of the 'old system register' as they were never alienated from the State.

They were lands that vested in the State (Crown) prior to the formation of the Commonwealth. Pursuant to the constitution (section 85), these lands were passed to the Commonwealth. A list of them was drawn up in 1908 and certain arrangements made for payment, but the Commonwealth did not necessarily take a title out over them.

The above Act enabled the Commonwealth to apply to the Registrar of Titles to have these lands registered under the *Real Property Act 1861*.

When the Commonwealth wished to deal with these lands, a survey was required if a subdivision was involved. A request to bring the land under the *Real Property Act 1861* required a freehold plan. Dimensions came from the original plan of the land.

11.5.2 Current procedures

See section 2.5 *Commonwealth titles,* page 5.

11.6 Easement with titles issued

See section 6.4 *Freehold easements,* page 101.

In rare cases, titles for easements have been issued. See Title 10967023 or Title 11685016/17 and RP50663.

11.7 Historical plan information

See section 9.41 *Plan types,* page 146.
See Appendix B *Abbreviations,* page 174.

The common plan form (from 800000) was introduced in 1989 and was used for both freehold action and State action surveys.

When Form 21, Version 1, was introduced under the *Land Title Act 1994* in late 1997, the plan series, identified with a barcode label commenced from 100000, the previous pre-numbered series had reached about 914000.

Prefixes for the various types of plans are (Table 11-1 to Table 11-4):

Table 11-1 Freehold action plan types

Freehold action plans			
Prefix	**Type of plan**	**Other information**	**Active**
BPA	Building units plan of amalgamation		Yes
BRP	Building units plan of resubdivision		Yes
BUP	Building units plan		Yes
GRP	Group title plan of resubdivision		Yes
GTA	Group title plan of amalgamation	No more plans being added to this series	No
GTP	Group titles plan		Yes
PGT	Pre-examined GTP		Yes
RP	Registered plan		Yes
SBA	Leasehold building units plan of amalgamation		Yes
SBP	Leasehold building units plan		Yes
SP	Survey plan		Yes
SPA	Stratum plan of amalgamation	Southbank	Yes
SPS	Stratum plan of subdivision	Southbank	Yes
SRP	Leasehold building units plan of resubdivision		Yes
SSP	Stratum plan		Yes
UB	Upper building units plan		Yes

Table 11-2 Mixed Use Development Act 1993 plan types

Mixed Use Development Act 1993 plans			
Prefix	**Type of plan**	**Other information**	**Active**
MCP	Mixed community plan		Yes
MPP	Mixed precinct plan		Yes
MSP	Mixed stratum plan		Yes

Table 11-3 Crown action plan types

Crown action plans			
Prefix	**Type of plan**	**Other information**	**Active**
AP	Administrative plan		Yes
CP	Crown plan		Yes

Crown action plans			
MPH	Mining plan (homestead tenure)	No more plans being added to this series	Yes
SF	State forest (tenure description)		Yes
NPW	National parks and wildlife		Yes
FTY	Forestry plan		Yes
RA	Road action plan		No
RX	Road excision plan		No
SP	Survey plan		Yes

Table 11-4 Plan types that are common to both freehold and Crown action plans

Freehold plan/Crown action plan			
Prefix	**Type of plan**	**Other information**	**Active**
DP	Deposited plan		Yes
IS	Identification survey		Yes
RC	Red cat		Yes
SP	Survey plan		Yes

11.7.1 Freehold action plans

In order to conform with statutory requirements under the *Land Title Act 1994* the surveyors certificate was required to be executed in accordance with the following timeframe:

- plans numbered 191500 to < 800000 executed by 30 June 1990
- plans numbered 800000 to 863500 executed by 30 June 1994
- plans numbered 863500 to 869500 executed by 31 March 1995.

The above timeframe requirement no longer applies; however, the plan must have been capable of registration at the date of certification, and satisfy the requirements of the Titles Registry, for the action proposed, at the date of lodgement.

The custodian for plans numbered between 1 and 799999 was as follows:

- southern (Brisbane) 1 to 299999
- central (Rockhampton) 600000 to 699999
- northern (Townsville) 700000 to 799999.

11.7.2 Crown action plans

In 1992, the county/town prefix for all Crown action plans was removed and replaced with the initials CP—Crown plan. The CP prefix was subsequently replaced by the survey plan (SP) prefix, introduced in 1997.

While the ‘county/town prefix’ is no longer used, the plan archive contains many plans that are catalogued in accordance with the historical ‘county/town’ prefix.

11.8 In strata

See section 9.49 *Surveys in strata* page 150.

Refers to surveys where the lots were defined by a surface that was referred to:

- the surface of the land; or
- a reduced level.

These plans often contained a statement like ‘to the depth of 50 feet below the surface’.

11.9 Irrigation areas

The *Water Act 2000* abolished irrigation areas.

The provisions of the *Water Resources Act 1989* required the following:

- A local government may not approve a plan of subdivision in an irrigation area unless the plan has first been approved by notation thereon by the Director-General of the department.
- The approval of the local government must be applied for not later than twelve months after the date of notation by the Director-General of the department. (Schedule Part 1, Clause 31A (7) of the *Water Resources Act 1989*.)
- A plan by a constructing authority is not a subdivision for the purposes of section 31A of the *Water Resources Act 1989* and does not require the approval of the Director-General of the department.

11.10 Old system land—resurvey

There is no known old system land in Queensland. In bringing this land under the provisions of the *Land Title Act 1994*, a lot-on-plan reference has been determined for these parcels and referred to in the certificate of title. Where the plan is of an area not previously surveyed and shown on a prior plan, use the description as given in lot-on-plan conversion on the certificate of title.

11.11 Paper subdivisions

See section 3.11 *Compiled plans and boundaries*, page 24.
See section 3.42 *Undescribed balances*, page 70.
See section 11.15 *Subdivision without survey* page 165.

The term ‘paper subdivisions’ refers to the creation of new parcels by title transfers

Section 48 of the *Real Property Act 1861* (now repealed) dealt with transfers of land. Section 48 stated:

> *‘When land under the provisions of this Act is intended to be transferred the transferor shall execute a memorandum of transfer in form D of the Schedule hereto and every such memorandum shall be attested to by a witness and shall for description of the land intended to be transferred refer to the grant or certificate of title of such land or shall give such description as may be sufficient to identify that particular portion of land intended to be transferred and shall contain an accurate statement of the estate or interest intended to be transferred and a memorandum of all mortgages and other encumbrances affecting the same and if such land be leased the name and description of the lessee with a memorandum of the lease.’*

The part underlined above allowed the Registrar of Titles to register a transfer over part of a title provided it was sufficiently described. These transfers occurred without a survey plan being available of the land being transferred. When the transfer document was lodged, it was accompanied by a metes and bounds description of the land being transferred. Often these transfers related to the subdivision of a rectangular parcel into two equal parts. The parts created by the transfer were normally described as subs A and B or resubs A and B of the parent parcel and became known as ‘paper subdivisions’ or ‘pencil subdivisions’. This name was applied because of the practice of pencil-plotting the subdivisions on the original plan of survey of the parent parcel. When the department implemented the shortened lot-on-plan description for parcels in the register, compiled plans were prepared for those lots that had no plan with dimensions available. There are still some outstanding lots that require plans to be prepared.

For an example see title 30015085 and RP619400.

11.12 Proclaimed survey area

When in the opinion of the chief executive of the department, the state control survey had been sufficiently developed within any area, and permanent survey marks had been established over such area, the Governor-in-Council could declare such area to be a proclaimed survey area under the *Survey Coordination Act 1952*.

A number of proclaimed survey areas in Queensland lapsed due to the provisions of the *Statutory Instruments Act 1992*.

11.13 Railway boundaries

Prior to 1914, railway land was not normally surveyed unless the land was being resumed from a surveyed parcel of land. Section 92(1)(3) of the *Railway Act 1914* vested in the Commissioner of Railways, all land within railway fences. It is generally accepted that this section only applied to land fenced prior to 1914.

Where unsurveyed railway land is being surveyed the fence should be adopted if it was erected prior to 1914 (*Railway Act 1914*).

The standard width for unsurveyed and unfenced railways is:

- 150 links (30·175 metres) in urban areas
- 300 links (60·35 metres) in rural areas.

With the railway being centred on the centreline of the constructed rails.

Valuable information that may assist in the determination of the boundaries may be found in the original railway books. All railway books have been enrolled in CISP and many are imaged. Care should be exercised in that the construction of the railway may not have been centred within the boundaries of the railway land, and the fences extant may not have been constructed on the same alignments as the original fences.

11.14 *River Improvement Trust Act 1940*

See section 10(5A) of the *River Improvement Trust Act 1940*.

For an example of a plan subject to the River Improvement Trust see RP167212 and Lot 2 on RP116442. Title 15515100.

11.15 Subdivision without survey

See section 11.11 *Paper subdivisions*, page 164.

11.16 Total deed areas

See section 3.6 *Areas*, page 14.

In the past, the plan showed a statement of the total deed area of the consolidated title as well as a list of the lots contained within the consolidated title. This information was required for the preparation of the deed of grant. For example:

Total deed area
Lots 1 & 2 on RP432167 and
Lots 5–7 on SL32114

144·2523 ha

Note: Where workers' homes perpetual town leases and State housing perpetual town leases were freeholded, it is not uncommon to find that the description in the deed of grant consists of two separate lots that are separate identities on an original registered plan. It is also noted in the deed of grant that it was granted under the Workers Homes Corporation Act or the *State Housing Act 1945*. Whether or not separate titles may be issued is a matter for determination by the Registrar of Titles.

Appendix A. Glossary

See section 1.3 *Definitions and conventions,* page 1.

This glossary of some of the most commonly used terms is intended to assist the user in understanding these Requirements. It is to be used in association with specific legislation.

access

See **dedicated access**.

Under the *Local Government (Planning and Environment) Act 1990*, 'access' was defined as a 'practical' means of entry. However, practical means of entry does not always guarantee 'dedicated access'.

access restriction lots

An access restriction lot is a separate lot in a subdivision. They may also be called buffer strips and were a town planning requirement of local government to restrict access from roads to adjacent land.

administrative advice

A document which is submitted by a local, commonwealth or state government authority or other authorised parties to record an interest in the lot in the ATS (e.g. notice of intention to resume).

Administrative plan (AP)

Plans that define boundaries and areas of land subject to dealings under an Act where a cadastral survey is not required. Used for administrative actions such as licences, permits, and various road actions.

allocation

Interests in land are carried forward from one title to the next through the allocation of the interests of old lots to the new lots. These interests may include easements, original grants, mortgages, etc.

associated documents

Associated documents are instruments that are lodged in the department with the plan (e.g. easements, leases, mortgages, nomination of trustees, transfers).

ATS

ATS (Automated Titles System) is the computerisation of the Torrens Title System of registration for all freehold and leasehold dealings in land in Queensland.

blind roads

Blind roads are roads which have no access from a contiguous road system and are no longer of concern to the Registrar of Titles, being a matter for the local government.

cadastral survey

Any process of determining the boundaries of a piece of land or waters, including preparation of plans, required or authorised:

- under any Act dealing with the alienation, leasing, and occupation of State lands or with mining, or affecting titles to land
- or
- by the proprietor, lessee or mortgagee under any Act affecting titles to land
- or
- by the owner, proprietor, lessee, mortgagee or occupier of, or any person holding a registered interest in, any land for the re-establishment of, or identification of, or adjustment of any boundary of such land

- or
- under any Act to be made or certified by a cadastral surveyor.

calc. book (historical)

A numbered, linen-bound book formerly held by each examiner. The book contained an index of all plans examined by that examiner and a copy of any requisition. This has been replaced by CISP.

caveat

A notice to the Registrar of Titles by a person claiming an interest in the land. It prevents the registration of any instrument affecting such land until the caveat is withdrawn, removed or lapses. Caveats are recorded in the ATS.

certificate of title

A certificate that may be issued by the Registrar of Titles that provides evidence of the ownership of a freehold interest in a parcel of land.

CISP

CISP (Computer Inventory of Survey Plans) is a textual database of all survey plans in the department.

comatose title (historical)

This was the title to the underlying parcel of land over which a building unit plan or group title plan had been registered. On extinguishment of a BUP or GTP any dealing with the parcel reverted to this title. With the commencement of the *Body Corporate and Community Management Act 1997*, all comatose titles were cancelled.

court order

An order of the Supreme Court regarding the transfer of land or the creation of a benefit easement where an encroachment exists. No local government consent is required for the associated survey plan.

Crown land (*Land Act 1962*)

See **State land**.

Crown lease

A lease that is issued under the *Land Act 1994*.

dealing

An action relating to a parcel of land, such as a transfer of an interest.

dealing number

A unique number allocated to each document and survey plan when lodged in the department. It determines the priority of registration of plans and associated documents in relation to a title.

dedicated access

See **access**.

A dedicated road formed or unformed, surveyed or unsurveyed providing legal access to a lot, reserve or State land. See 'Access' in the *Local Government (Planning and Environment) Act 1990*.

deed of grant

Land granted in fee simple by the State, or the document evidencing the grant, including an indefeasible title under the *Land Title Act 1994*. The deed is enrolled in the freehold register and the registered owner's indefeasible title is created.

deed of grant in trust

Land granted in fee simple in trust by the State, or the document evidencing the grant, including an indefeasible title under the *Land Title Act 1994*.

deemed tramway easements

See section 6.2 *Cane railway easements*, page 100.

Tramway easements are defined by law and were originally created by section 41 of the *Sugar Experiment Station Act 1900* and subsequently preserved by section 84 of the *Regulation of Sugar Cane Prices Act of 1962, No. 45*. The tramway easement rights were preserved under section 203 of the *Sugar Industry Act* No 20 of 1991, provided it was registered in the register of easements (*Sugar Industry Act 1991*) prior to 30/06/1996. The *Sugar Industry Act 1999* now requires the person to whom the access right is granted to advise the Registrar of Titles (section 70 (2)) and the Registrar of Titles is required to enter an administrative note in the register (section 70 (3)).

defeasance

A condition relating to a title that can void the title if performed. Such conditions are contained in a separate instrument (not the title itself).

department

The State government agency that administers the *Survey and Mapping Infrastructure Act 2003*.

deposited plan

A survey plan or copy of a survey plan (other than an identification survey plan) submitted to the department as a record of survey information. It includes:

- original State land action plans
- copies of plans submitted by surveyors
- plans that have been deposited or lodged for registration but are marked 'no further action'
- plans submitted pursuant to section 16 of the *Survey and Mapping Infrastructure Act 2003*.

easement

A right enjoyed over the lands of a registered owner. The dominant tenement is the land to which a right is granted. The servient tenement is the land that is burdened by the granting of a right to another parcel of land. For easements in gross there is no dominant–servient relationship.

encroachment

Encroachment by a building, including encroachment by overhang of any part as well as encroachment by intrusion of any part in or on the soil. *(Property Law Act 1974).* **(See section 3.20 *Encroachments and improvements on or near a boundary,* page 35.)**

endorsed plan

Prior to 3 July 2023 surveyors accredited by the department were required to endorse survey plans using a personal signature on sheet two and submit a copy of the endorsed plan to the department prior to lodgement of the plan for registration. As a consequence of survey audit modernisation, accreditation of surveyors was discontinued. Plans may still be endorsed, but this is no longer a requirement...

fee simple

An estate in land which is absolute and without limitation to inheritance. It implies full ownership in land, the tenure of which is called freehold.

forest entitlement area

A reservation of commercial timber, and the land on which it stands, to the State in a deed of grant or freeholding lease to enable the State to undertake long-term management of timber.

freehold

Land that has been alienated from the State.

freehold title

An estate in fee simple created by a deed of grant when land is granted by the State, or an indefeasible title created on registration of subsequent dealings.

fully withdrawn plan

A lodged plan that is no longer required to be registered by the interested parties. The consent of the registered owner or the lodger is required prior to withdrawal.

geodetic control point

Positions established and marked on the ground, which are coordinated in a geodetic coordinate system.

geodetic datum

A set of constants used for defining the coordinate reference system for geodetic control surveys.

holding

State land held by any lessee. A 'pastoral holding' is a State lease used for grazing purposes (*Land Act 1962*). There is no definition of 'holding' in the *Land Act 1994*.

indefeasible title

The indefeasible title for a lot is created on the recording of the particulars of the lot in the freehold land register.

identification survey/plan

A cadastral survey carried out for the purpose of identification, re-establishment, marking or re-marking existing land or water boundaries. No interests are created or altered as a result of these surveys.

instrument

Instruments include:

- a deed of grant or certificate of title
- a will, grant of representation, or exemplification of a will, that may be used to deal with a lot
- a deed that relates to or may be used to deal with a lot
- a power of attorney that may be used to deal with a lot
- a request, application or other document that deals with a lot and may be registered under the *Land Title Act 1994*
- a map or plan of survey that may be lodged.

interest in land

Rights, duties, liabilities connected with the land. The extent of the rights depending on the level of interest held (e.g. leasehold interest, freehold interest, joint interest, interest in common).

lease (*Land Title Act 1994*)

A lease is an instrument creating an interest in land for a fixed period, usually in consideration of the payment of rent. It is a requirement of a lease that there must be a lessor, a lessee, a demised premise or demised area and a term granted.

leasehold

State land leased to a person or company, for a term of years or in perpetuity.

lodged plan

A plan which has been lodged with the Titles Registry for the purpose of registration as an instrument to give effect to a dealing(s) and is recorded in the ATS.

lodgement

The act of acceptance for registration purposes, by a registering authority of a registrable instrument such as a plan of survey.

lot (*Land Act 1994*)

A separate, distinct parcel of land created on:

- the registration of a plan of subdivision
- or
- the recording of particulars of a lease.

lot (*Land Title Act 1994*)

A separate, distinct parcel of land created on:

- the registration of a plan of survey
- or
- the recording of particulars of a deed of grant.

lot-on-plan

Lot-on-plan is a unique identifier for a parcel of land.

metes and bounds

'Metes' are the dimensions of the parcel and 'bounds' are the adjoiners. It was common for titles and grants to have a word description of the land, the metes and bounds. An example is deed of grant 20361102, which states in part:

> '*Commencing at the south corner of portion 177, and bounded thence on the north east by that portion bearing 318 degrees 46 chains 59 ½ links, on the north-west by portion 175 bearing 228 degrees 19 chains 97 ½ links, and on the south west and on the south-east by roads bearing 138 degrees 46 chains 60 3/10 links and 48 degrees 19 chains 97 6/10 links to the point of commencement*.'

natural feature

A topographical feature suitable for use as a boundary in a cadastral survey, including:

- a mountain range
- a cliff
- a river
- a watercourse
- a seashore.

notice of intention to resume (NIR)

A notice lodged in the department by a statutory authority of their intention to resume. It is noted in ATS as an administrative advice.

nomination of trustees

See **transfer to trustees**.

original grant

The original deed of grant for any parcel of land issued by the State detailing therein the reservation of rights to the State.

parcel

A parcel, of land, means a bounded area in which an interest relating to the land exists or will exist. This includes primary and secondary interest parcels within the meaning of the *Queensland Parcel Identification Standard SIG/2013/396*, <www.resources.qld.gov.au/?a=109113:policy_registry/parcel-identification_standard.pdf>.

Positional Uncertainty (PU)

The uncertainty of the horizontal and/or vertical coordinates of a survey control mark with respect to the coordinate datum.

proclaimed survey area (PSA)

See section 11.12 *Proclaimed survey area,* page 165.

public use land

Includes roads and other lots that are to be dedicated for public use on registration of a plan of survey or plan of subdivision.

red cat plan (redundant catalogue plan)

A copy of a survey plan lodged pursuant to section 16 of the *Survey and Mapping Infrastructure Act 2003*. The copy is held as a record of survey data only and as soon as the original survey plan is lodged the copy is no longer accessible. Derived from the term 'redundant catalogue plan number', which was given to such a copy.

register (noun)

A record of information about land maintained by the Registrar of Titles, under the authority of the *Land Title Act 1994* (i.e. the freehold land register) and under the authority of the *Land Act 1994* (i.e. leasehold land register).

register (verb)

To record the particulars of a lot, interest, instrument or other thing in the appropriate register in the land registry.

registered plan

A lodged plan that has proceeded to registration with or without accompanying documentation and is now recorded within the land titles register.

rejected plan

A lodged plan that is prevented from proceeding to registration and is rejected by the Registrar of Titles. The original plan is returned to the lodger.

Relative Uncertainty (RU)

The expected uncertainty between two positions that were determined independent of each other (i.e. there is no direct observed measurement between the two points). The relative uncertainty may be calculated from either the Survey or Positional Uncertainties of the two positions and reflects the 'expected difference' between a direct measurement and the computed 2D vector.

requisition

A formal notification that a document has defects and those defects should be clarified or corrected before the document may be passed for registration.

reservation in a deed or lease

A clause in a deed or lease where the grantor (the State) reserves something to itself (e.g. gold and petroleum, or a certain amount of land) within the lease or deed.

reservation in title

See **road reservation**.

Reservations in title are areas of land set aside in deeds of grant for the express use of the State (Crown) in the process of the closer settlement of Queensland. They are generally non-delineated areas of land within the external boundaries of a lot (or other parcel of land). Reservations in title are mainly for road purposes but can be for railway, telegraph, or other defined purposes.

reserve

A parcel of land that has been set aside, through the provisions of the *Land Act 1994*, for a community purpose (e.g. for park and recreation purposes).

reserved road

A reserved road, either surveyed or unsurveyed, is a road for public use and is shown on a plan in a specific location and reserved from the title.

resumption

The procedure under which an authority, empowered by the State government, compulsorily acquires land for a specific purpose.

road action plan

See **Administrative plan**.

A sketch plan that was drawn for the purpose of road opening and/or closure under the *Land Act 1994*.

road excision plan

See **Administrative plan**.

A sketch plan that was drawn for the purpose of excising an area of land from a Land Act lease for the purpose of dedicating the area as road.

road reservation

See **reservation in title**.

A road reservation does not have a specific location within a lot but is reserved from the title. Note that on some older plans, a road reservation is referred to as ‘reserved for road purposes’.

Root Mean Squared Error (RMS or RMSE)

The RMSE of a sample is the quadratic mean of the differences between the observed values and predicted ones.

State land (*Land Act 1994*)

All land in Queensland, except freehold land.

statement of intent

See the Land Titles Practice Manual (Queensland) section [21-2270] Public Use Land.

statutory area

An area of land wherein either:

- another statutory authority, in addition to the local government, is required to consent to the plan (e.g. within a coastal management control district)
- or
- some extra condition must be complied with.

statutory authority

An authority that is created through an Act of Parliament.

surrender

To surrender an interest in land (e.g. a lease) is to give it back to the person or body (e.g. the State) from whom it was granted.

survey

The act or process of determining the form, contour, position, area, height, depth or any other similar particulars of the earth's surface, whether on land or water, or of any natural or artificial features on, below or above any part of that surface. It also refers to planning the position or the length and direction of the bounding lines of any part of that surface, or of any natural or artificial features, and includes the making or obtaining of a plan or plans.

Survey Uncertainty (SU)

The uncertainty of the horizontal and/or vertical coordinates of a survey control mark independent of datum. That is, the uncertainty of a coordinate relative to the survey in which it was observed, without the contribution of the uncertainty in the underlying datum realisation.

tenure

The form in which property is held, set aside or dealt with under an Act (e.g. freehold, reserve, road or unallocated State land). Tenure is also used to describe an interest in land that has a term (e.g. leasehold as opposed to freehold).

transfer and request to amalgamate

The transfer and request to amalgamate are documents used to resolve cases of joint ownership created by the movement of title boundaries by survey when two or more different registered owners are involved.

transfer to trustees (formerly nomination of trustees)

The document that is often used in dealing with access restriction lots as it transfers the land to the relevant local government in trust, usually for town planning purposes.

unallocated State land (USL)

All land in Queensland, except land that is:

- freehold land or land granted, or contracted to be granted, in fee simple by the State
- or
- road or reserve, including national park, conservation park, State forest or timber reserve
- or
- land subject to any lease or licence issued by the State.

unregistered dealing

An instrument that has been lodged with the Registrar of Titles but not yet registered.

vacant Crown land

See **unallocated State land**.

vested land

State land, the control of which has been ceded to a statutory authority (e.g. Port of Brisbane).

If an Act does not authorise the grant of a tenure over the vested land, the vested land must be surrendered to the State before the land may be further dealt with as unallocated State land. See departmental procedure, *Issue of Tenures to a Port Authority/Corporation SLM/2013/582*, <www.resources.qld.gov.au/?a=109113:policy_registry/tenures-to-port-authority-corporation.pdf>.

Appendix B. Abbreviations

B.1 General

Title	Abbreviation
Automated Titles System	ATS
Australian Height Datum	AHD
Australian Map Grid	AMG
Building unit plan	BUP
Certificate of title	C/T
Computer Inventory of Survey Plans	CISP
Contaminated land	C/L
Crown action plan	CP
Differential Global Navigation Satellite System	DGNSS
Digital Cadastral Data Base	DCDB
Deed of grant	D/G
Deposited plan	DP
Easement	Emt
Global Positioning System	GPS
Global Navigation Satellite System	GNSS
Forest entitlement area	FEA
Freehold action plan	RP
Group title plan	GTP
Land Title Practice Manual (Queensland)	LTPM
Map Grid of Australia	MGA
Permanent survey mark	PM or PSM
Proclaimed survey area	PSA
Real Time Kinematic	RTK
Registrar of Titles Directions for the Preparation of Plans	RTDPP
Resumption	Resump
Survey Control Data Base	SCDB
Vegetation protection order	VPO

B.2 Crown tenures—*Land Act 1962*

Freeholding tenures	Abbr
Agricultural farm	AF
Auction perpetual lease	APL
Auction purchase freehold	APF
Development lease	DL
Freeholding sale	F
Grazing homestead freeholding lease	GHFL
Perpetual country lease converted	PCL(C)
Perpetual lease selection	PLS
Perpetual suburban lease converted	PSL(C)
Perpetual town lease converted	PTL(C)
Special lease purchase freehold	SLPF
Special purchase	SP

Leasehold tenures	Abbr
Grazing homestead perpetual lease	GHPL
Non-competitive lease	NCL
Pastoral development holding	PDH
Pastoral holding	PH
Perpetual country lease	PCL
Perpetual suburban lease	PSL
Perpetual town lease	PTL
Preferential pastoral holding	PPH
Special lease	SL
Stud holding	SH

Occupations	Abbr
Occupation licence	OL
Permit to occupy	PO
Road licence	RL

B.3 State tenures—*Land Act 1994*

Freeholding tenures	Abbr
Freeholding sale	F
Grazing homestead freeholding lease	GHFL
Freeholding lease	FL

Leasehold tenures	Abbr
Term lease	TL
Perpetual lease	PPL

Permits	Abbr
Permit to occupy	PO
Road licence	RL

B.4 Department of Housing

Leasehold tenures	Abbr
State housing freeholding lease	SHFL
State housing perpetual town lease	SHPTL
Workers' homes perpetual town lease	WHPTL

B.5 Acts and Regulations and their abbreviations

Acts and Regulations are referred to in full in the document.

B.6 Commonly used plan abbreviations

About ..... Abt
Addition ..... Addn or Addtn
Alignment Spike ..... A Spk
Alluvial Mining Claim ..... AMC
Application Post ..... Appln Post
Approximately ..... Approx
ARCADE ..... ARC
Australian Geodetic Datum ..... AGD
Australian Height Datum ..... AHD
Australian Map Grid ..... AMG
Avenue ..... Ave

Balance ..... Bal
Bank ..... Bk
Bitumen ..... Bit
Block ..... Blk
BOULEVARD ..... BLVD
BOUNDARY ..... BDY
Brick ..... Br or Bk or Brk
BROADWAY ..... BDWY
Brook ..... Brook
Building ..... Bldg
Building Unit Plan ..... BUP
Business Area ..... BA

Calculated ..... Calc
Centre ..... Cen (C)
CHANNEL ..... CHNL
CHASE ..... CH
CIRCLE CCL
CIRCUIT ..... CCT
CLOSE CL
Coal Mining Lease ..... CML
Concrete ..... Conc
Connection ..... Conn
Construction ..... Constn
Continued ..... Contd
Corner ..... Cor or Cnr
County ..... Cty
COURT ..... CT
Covenant ..... Cov
Creek ..... Ck
CRESCENT ..... CRES
crown plan ..... CP

Datum Post ..... D Post
Dead ..... Dd
Deduced (Explanatory plan) ..... Ded
Deep Driven Mark ..... DDM
Departmental ..... Deptl
Developmental ..... Dev
Diagram ..... Diag
Distance ..... Dist
Disturbed ..... Distd
Dog Spike ..... D Spk
Dredging Area ..... DA
Dredging Claim ..... DC
Dredging Lease ..... DL
Drill Hole (& Wing) ..... D Hole, D/H or D/H & W
DRIVE ..... DR

Easement ..... Emt
East ..... E
Electric Light Pole ..... ELP
ESPLANADE ..... ESP
Exploration Permit ..... EP
Coal ..... EPC
Minerals ..... EPM
Petroleum ..... EPP
EXPRESSWAY ..... EXPWY
Extended ..... Extd

Fence Posts:

Round Fence Post ..... RFP
Square Fence Post ..... SFP
Square Concrete Fence Post ..... Conc SFP

Round Steel Fence Post) ..... either
Round Galv. Iron Fence Post) ..... Steel FP
Steel Fence Post) ..... or
Tubular Steel Fence Post) ..... GIFP

Corner Square Fence Post ..... Cor SFP
Centre Round Fence Post ..... Cen RFP
Centre Face Square Fence Post)..... Cen Face SFP
)..... (CFace SFP)
Fences: E.g. 2 Barbed Wire, 1 Plain Wire 2B 1P

FREEWAY .....FWY
Foot ..... Ft
Found ..... Fd

Galvanized .....Galv
Galvanized Iron ..... GI
Gold Field Homestead .....GFH
Gold Mining Lease .....GML
Ground .....Gnd
Group Title Plan ..... GTP
GROVE ..... GR
Gully Trap ..... G/T

Headwall .....Hdwll
Hectares .....ha
HIGHWAY ..... HWY
High Water Mark ..... HWM
Holding ..... Hldg(H)

Identification ..... Ident
Identification Survey ..... IS
Instruction .....Inst
Intersection ..... Intsn or Int
Iron Pin ..... Pin, I Pin (IP never used)
ISLAND ..... IS

Kerb .....Kb
Kilometre(s) .....Km

LANE ..... LA
Leaning .....Leang
Left Bank .....LBk
Licensed Gem Claim .....LGC
Line Peg ..... LP
Local Government .....Local Govt
Low Water Mark ..... LWM

Manhole ..... M/H
Map Grid of Australia .....MGA
Market Garden Area .....MGA
Mark ..... Mk
Measurement ..... Mmt
Metre(s) .....m
Mineral Claim .....MC
Mineral Development Licence ..... MDL
Miners Homestead .....MH
Miners Homestead Lease ..... MHL
Miners Homestead Perpetual Lease .....MHPL
Mines Plan ..... MP
Mining Lease ..... ML
Mining Title Freehold Lease ..... MTFL
Mount ..... Mt
Mountain ..... Mtn

Nails:
Galv. Iron Nail .....GINail
Lead Head Nail .....LHNail
Ramset Nail .....Ram Nail
Round Head Nail .....RHNail
Spring Head Nail ..... SHNail

No Original Mark .....No O Mk
North ..... Nth (N)
Noted & Checked ..... Ntd & Ckd or N & C
Number .....No

Obliterated .....Obltd
Occupation .....Occupn or Occ
Old .....Old
Original ..... Orig (O)
Original Iron Pin .....OIP
Original Line Peg ..... OLP
Original Peg .....OP
Original Mile Post ..... OMP
Original Permanent Survey Mark ..... OPM or OPSM
Original Pointer Peg ..... O Ptr
Original Reference Tree .....ORT
Original Survey Post . .....OSP

Overhead ..... O/H

Permanent Marks:

Permanent Survey Mark ..... Perm Mk, PM or PSM
Brass Plaque ..... Brass Plq
Deep Driven Mark ..... DDM
Mini Mark ..... Mini Mk
Star Picket ..... S Pkt

PARADE ..... PDE
PARKWAY ..... PKWY
PATHWAY ..... PTHWY
Peg ..... Peg(P)
Permanent ..... Perm
Permanent Survey Mark ..... Perm Mk, PM or PSM
Petroleum Lease ..... PL
Petroleum Well Location ..... PWL
Pillar ..... Plr
Pipeline license ..... P Lic
PLACE ..... PL
Placed ..... Pld
PLAZA ..... PLZ
Plinth ..... Plth
Pointer ..... Ptr
Portion ..... Por
Position ..... Posn
Power Pole ..... PP
Profit a Prendre ..... Profit or PaP
PROMENADE ..... PROM

QUAY ..... QY

RAILWAY ..... RLY
Ranged ..... Rgd Only
Reads ..... Rds
Recreation ..... Rec.
Redundant Catalogue Plan ..... RC
Registered Plan ..... RP
Reinstated ..... Reinstd
Remains ..... Rmns
Remarked ..... Remkd
Removed ..... Remvd
Renewed ..... Renwd
Reset ..... Reset
Reserve ..... Res
Reserved ..... Resd
Reservation (Road Reservation) ..... Rd Resn
Reservoir ..... Rsvr
Residence Area ..... RA
Restricted Mining Claim ..... RMC
Restricted Mining Purposes Claim ..... RMPC
Retaining Wall ..... Ret Wall
Right Bank ..... RBk
Right of Access ..... R of A
Right of Way ..... R of W
RIVER ..... RIV(R)
ROAD ..... RD

Section ..... Sec
Sheet ..... Sh
Survey and Mapping Infrastructure Act 2003. SMI Act
South ..... Sth(S)
Special Bauxite Mining Lease ..... SBML
Special Coal Mining Lease ..... SCML
Special Gem Claim ..... SGC
Special Mining Lease ..... SML
Special Perpetual Mining Purposes Lease ..... SPMPL
Spike ..... Spk
Split ..... Split
Standard ..... Stand
Star Picket ..... S Pkt
Station ..... Stn
Straightened ..... St'd or Strghd
Strainer ..... Stnr
STREET ..... ST
Stump ..... Stp
Suburban ..... Subn
Surface ..... Surf
Surface Area ..... Surf Area (SA)
Surveyed ..... Survd

Tailings Area ..... TA
Telegraph Pole ..... TP
TERRACE ..... TER

Tidal Boundary.....Tdl Bdy

Traverse ..... Trav

Unallocated State Land ..... USL

Underground .....U/G

Very Old ..... V Old

Water Hole ..... WH

Water Right .....WR

Water Tower ..... Wt Twr

Watershed ..... W'shed

West ..... W

If upper and lower case is used for a word to be abbreviated, then use upper and lower case for the abbreviation.

e.g.: **RAILWAY = RLY**
Railway Fence = Rly fence
CHANNEL = CHNL
Kerb and Channel = Kerb & Chnl

B.7 Abbreviations—common trees

Bauhinia	Bauh
Beefwood	Beefwd
Blackbutt	Bkbutt
Blackwood	Blackwd
Bloodwood	Bldwd
Bollywood	Bollywd
Bonewood	Bonewd
Bottle brush	Bot Brush
Bottle tree	Bot Tree
Boxwood	Boxwd
Brigalow	Brig
Cabbage gum	Cab Gum
Camphorwood	Camphwd
Candlenut	Candnt
Cheesewood	Cheesewd
Coachwood	Coachwd
Coolibah	Coolbh
Corkwood	Corkwd
Cottonwood	Cottonwd
Cypress pine	Cy Pine
Dead finish	Dd Fin
Fibrewood	Fibrewd
Gum topped box	GT Box
Ironbark	Ironbk
Ironwood	Ironwd
Johnson River hardwood	JR Hardwd
Kurrajong	Kjong
Lancewood	Lancewd
Mahogany	Mahog
Mangrove	Mgrove
Messmate	Mmate
Milkwood	Milkwd
Moreton Bay ash	MB Ash

Nutwood	Nutwd
Peppermint	Pmint
Pepperwood	Pepperwd
Poplar gum	Pop Gum
Quandong	Qdong
Rosewood	Rosewd
Saffron heart	Saf Heart
Sandalbox	Sandbox
Sandalwood	Sandwd
Sassafras	Sasfras
Satinwood	Satinwd
Scrubtree	Scrub
Scrubwood	Scrub
Silkwood	Silkwd
Spotted gum	Sp Gum
Stringybark	Stybk
Tallowwood	Tallowd
Tulipwood	Tulipwd
Turpentine	Turp
Whitewood	Whitewd
Yellowjacket	Y Jacket
Yellowwood	Yellowd

Appendix C. Styles

Information

See section 9.51 *Text styles,* page 150.

The following are text styles traditionally used on survey plans:

- subject lot, mining tenure (where used as legal property descriptions), easement, island and diagram

  ABCDEFGHIJKLMNOPQRSTUVWXYZ
  I234567890

- adjoining style to above and their catalogue numbers, adjacent (non-adjoining) road, street, railway, channel and drainage area, all distances and all column headings and entries, statements and endorsements, corner information, plan title (where applicable), features (gully, bldg, 2B 1P fence, etc.), read and ranged only bearing, area (right of decimal)

  ABCDEFGHIJKLMNOPQRSTUVWXYZ
  I234567890 abcdefghijklmnopqrstuvwxyz

- subject road, street, lane, pathway, drain and channel area, railway, highway, expressway, freeway and plan title (where applicable)

  ABCDEFGHIJKLMNOPQRSTUVWXYZ
  1234567890

- subject bay, sea, ocean, river, creek, area (left, of decimal), plan title (where applicable), adjoining state (e.g. NSW)

  ABCDEFGHIJKLMNOPQRSTUVWXYZ
  1234567890 abcdefghijklmnopqrstuvwxyz

- adjacent (non-adjoining) river, parish name (upper and lower case), bay, ocean, sea

  ABCDEFGHIJKLMNOPQRSTUVWXYZ

- adjoining county name, adjoining or internal creek (note: for capitals, use style above)

  abcdefghijklmnopqrstuvwxyz

- subject holding, parish name on face (when applicable)

  ABCDEFGHIJKLMNOPQRSTUVWXYZ
  1234567890
  abcdefghijklmnopqrstuvwxyz

- all bearings (except column entries and reads), station numbers

  I234567890 abcdefghijklmnopqrstuvwxyz

Appendix D. Symbols

Information

See section 9.48 *Symbols,* page 149.

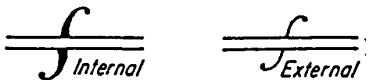
The following are symbols traditionally used on survey plans:

adit

astronomical station

bench mark

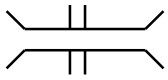
binder (vinculum)



bore

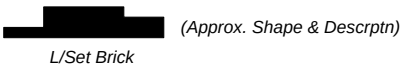
bore and drain

bridge and culvert



broad arrow

building



cliff or escarpment (traversed)

creeks and rivers (traversed)

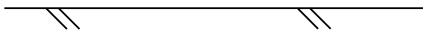
creeks and rivers (not traversed)

cutting

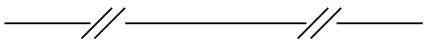
dam

embankment or steep bank

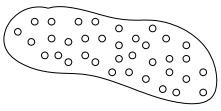
fence—on boundary



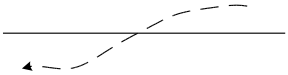
fence—internal



gravel pit



gully

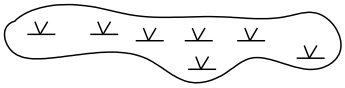


horizontal control point

lake or lagoon

lighthouse

mangroves



mining district

mining field

observation station

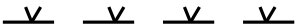
peak

permanent survey mark

permanent water hole

photogrammetric control point

power line



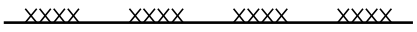
quarry

railway single track

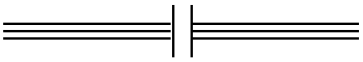
railway double track

range or ridge

retaining wall



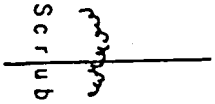
road overbridge



rocky foreshore

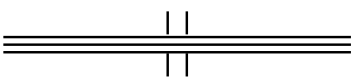
sand

scrub or timber ridge



shaft

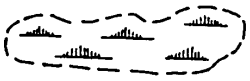
subway under railway



survey station

O *(Small circle with number)*

swamp



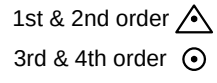
tank (earth)

telephone or telegraph line

timber ridge

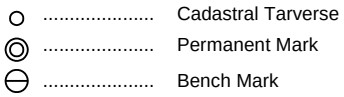
track

trigonometrical station

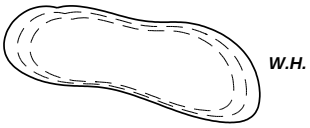


tunnel

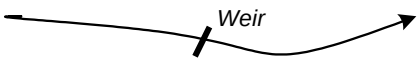
vertical control point



waterhole



weir



well

windmill

Appendix E. Certificates

Information

These examples are designed to assist with the completion of the relevant forms.

Example 1—Form 13—individual cadastral surveyor

Survey and Mapping Infrastructure Act 2003

Certificate for cadastral plans

I, John William Brown hereby certify that the land comprised in this plan was surveyed by ***me personally*** and that the plan is accurate, that the said survey was performed in accordance with the *Survey and Mapping Infrastructure Act 2003* and *Surveyors Act 2003* and associated Regulations and Standards and that the said survey was completed on ***1/6/2014***.

JW Brown Date : ***1/8/2014***

Cadastral Surveyor

Example 2—Form 13—corporation cadastral surveyor

Survey and Mapping Infrastructure Act 2003

Certificate for cadastral plans

J W Brown Surveys Pty Ltd (ACN or ABN 123456789) hereby certify that the land comprised in this plan was surveyed by ***the corporation, by Peter Andrew Smith, cadastral surveyor, for whose work the corporation accepts responsibility*** and that the plan is accurate, that the said survey was performed in accordance with the *Survey and Mapping Infrastructure Act 2003* and *Surveyors Act 2003* and associated Regulations and Standards and that the said survey was completed on ***1/6/2014***.

COMMON SEAL ACN No

John William Brown, ***Director***

Brian Lloyd Gardiner, ***Director*** Date : ***1/8/2014***

Note: A common seal may not be required, depending on the corporation's constitution.

Example 3—Form 13—individual cadastral surveyor supervising a registered person

Survey and Mapping Infrastructure Act 2003

Certificate for cadastral plans

I, John William Brown hereby certify that the land comprised in this plan was surveyed by ***Peter Andrew Smith, surveying associate, for whose work I accept responsibility*** and that the plan is accurate, that the said survey was performed in accordance with the *Survey and Mapping Infrastructure Act 2003* and *Surveyors Act 2003* and associated Regulations and Standards and that the said survey was completed on ***1/6/2014.***

JW Brown Date : ***1/8/2014***

Cadastral Surveyor

Note: See section 75 of the *Surveyors Act 2003* regarding the requirements for supervision.

Example 4—Form 13—corporation cadastral surveyor, survey by registered person other than a cadastral surveyor

Survey and Mapping Infrastructure Act 2003

Certificate for cadastral plans

J W Brown Surveys Pty Ltd (ACN or ABN 123456789) hereby certify that the land comprised in this plan was surveyed by ***the corporation, by Peter Andrew Smith, surveying graduate, for whose work the corporation accepts responsibility, under the supervision of John William Brown, cadastral surveyor*** and that the plan is accurate, that the said survey was performed in accordance with the *Survey and Mapping Infrastructure Act 2003* and *Surveyors Act 2003* and associated Regulations and Standards and that the said survey was completed on ***1/6/2014.***

COMMON SEAL ACN No

John William Brown*, Director*

Brian Lloyd Gardiner*, Director* Date : ***1/8/2014***

Note: A common seal may not be required, depending on the corporation's constitution.

Example 5—Form 18—individual cadastral surveyor

Survey and Mapping Infrastructure Act 2003

Certificate for cadastral plans—compiled

I, John William Brown hereby certify that ***I have*** made this plan under Section 18 of the *Survey and Mapping Infrastructure Regulation 2024* and pursuant to the *Survey and Mapping Infrastructure Act 2003* and *Surveyors Act 2003* and associated Regulations and Standards and that the plan is accurate, and compiled from ***CP842126 and RP181275 in the Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development.***

JW Brown Date : ***1/8/2014***

Cadastral Surveyor

Example 6—Form 18—corporation cadastral surveyor

Survey and Mapping Infrastructure Act 2003

Certificate for cadastral plans—compiled

J W Brown Surveys Pty Ltd (ACN or ABN 123456789) hereby certify that ***the corporation, by Peter Andrew Smith, cadastral surveyor, for whose work the corporation accepts responsibility, has*** made this plan under Section 18 of the *Survey and Mapping Infrastructure Regulation 2024* and pursuant to the *Survey and Mapping Infrastructure Act 2003* and *Surveyors Act 2003* and associated Regulations and Standards and that the plan is accurate, and compiled from ***CP842126 and RP181275 in the Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development.***

COMMON SEAL ACN No

John William Brown*, **Director***

Brian Lloyd Gardiner*, **Director*** Date : ***1/8/2014***

Note: A common seal may not be required, depending on the corporation's constitution.

Example 7—Form 18—individual cadastral surveyor supervising a registered person

Survey and Mapping Infrastructure Act 2003

Certificate for cadastral plans—compiled

I, John William Brown hereby certify that ***Peter Andrew Smith, surveying associate, for whose work I accept responsibility, has*** made this plan under Section 18 of the *Survey and Mapping Infrastructure Regulation 2024* and pursuant to the *Survey and Mapping Infrastructure Act 2003* and *Surveyors Act 2003* and associated Regulations and Standards and that the plan is accurate, and compiled from ***CP842126 and RP181275 in the Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development.***

JW Brown Date : ***1/8/2014***

Cadastral Surveyor

Note: See section 75 of the *Surveyors Act 2003* regarding the requirements for supervision.

Example 8—Form 18—corporation cadastral surveyor, plan prepared by registered person other than a cadastral surveyor

Survey and Mapping Infrastructure Act 2003

Certificate for cadastral plans—compiled

J W Brown Surveys Pty Ltd (ACN or ABN 123456789) hereby certify that ***the corporation, by Peter Andrew Smith, surveying graduate, for whose work the corporation accepts responsibility, under the supervision of John William Brown, cadastral surveyor, has*** made this plan under Section 18 of the *Survey and Mapping Infrastructure Regulation 2024* and pursuant to the *Survey and Mapping Infrastructure Act 2003* and *Surveyors Act 2003* and associated Regulations and Standards and that the plan is accurate, and compiled from ***CP842126 and***

RP181275 in the Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development.

COMMON SEAL ACN No

John William Brown, Director

Brian Lloyd Gardiner, Director Date : ***1/8/2014***

Note: A common seal may not be required, depending on the corporation's constitution.

Example 9—Form 12—individual cadastral surveyor

Survey and Mapping Infrastructure Act 2003

Certificate for survey records

I, John William Brown hereby certify that these survey records are accurate records of the survey performed by ***me personally.***

JW Brown Date : ***1/8/2014***

Cadastral Surveyor

Example 10—Form 12—corporation cadastral surveyor

Survey and Mapping Infrastructure Act 2003

Certificate for survey records

J W Brown Surveys Pty Ltd (ACN or ABN 123456789) hereby certify that these survey records are accurate records of the survey performed by ***the corporation, by Peter Andrew Smith, cadastral surveyor, for whose work the corporation accepts responsibility.***

COMMON SEAL ACN No

John William Brown, Director

Brian Lloyd Gardiner, Director Date : ***1/8/2014***

Note: A common seal may not be required, depending on the corporation's constitution.

Example 11—Form 12—individual cadastral surveyor supervising a registered person

Survey and Mapping Infrastructure Act 2003

Certificate for survey records

I, John William Brown hereby certify that these survey records are accurate records of the survey performed by ***Peter Andrew Smith, surveying graduate, for whose work I accept responsibility.***

JW Brown Date : ***1/8/2014***

Cadastral Surveyor

Note: See section 75 of the *Surveyors Act 2003* regarding the requirements for supervision

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Example 12—Form 12—corporation cadastral surveyor, survey performed by registered person other than a cadastral surveyor

Survey and Mapping Infrastructure Act 2003

Certificate for survey records

J W Brown Surveys Pty Ltd (ACN or ABN 123456789) hereby certify that these survey records are accurate records of the survey performed by ***the corporation, by Peter Andrew Smith, surveying graduate, for whose work the corporation accepts responsibility, under the supervision of John William Brown cadastral surveyor.***

COMMON SEAL ACN No

John William Brown*, Director*

Brian Lloyd Gardiner*, Director* Date : ***1/8/2014***

Note: A common seal may not be required, depending on the corporation's constitution.

Appendix F. Reports

Information

F.1 Reinstatement reports

These examples are designed to assist with the completion of reinstatement reports (see section 3.33 *Reinstatement of boundaries*) by showing different styles and structures of reports that can be used to explain the reinstatement clearly and succinctly.

Example 1 – Small urban

- Plans used – RP126732, IS823454 & SP634567.
- This survey is an identification survey of Lot 21 on RP126732 to facilitate new fencing.
- Stns 1, 4, 5 & 6 were fixed by OIPs off each Stn, agreeing with RP126732 and IS823454 (Stns 5 & 6).
- The OIP off Stn 3 was found beside an underground telecom pit, appears disturbed and does not agree with previous surveys, so has been re-referenced.

Example 2 – Larger urban

Plans viewed – SL8654, SL9876, IS123456, RP234567, RP876543, SP123456 and SP234567.

The meridian of this survey is that of SL8654, which is the same as SL9876. Subtract 35 seconds from bearings on SP123456 and SP234567 to rotate them to the meridian of this plan.

Original reference marks were found in good agreement off Stns 19, 35, 79 and 86 on SL9876 in Smith Street and adopted, which reinstated the Smith Street alignment. See Stns 1, 4, 6 and 7 on this plan.

The survey was then connected northwards to the only remaining marks from IS123456. These marks are located along Maroon Road and Grey Street off Stns 6 and 17 on that plan. See Stns 2 & 3 on this plan.

The only other original mark at the northern extension of Lot 123 on Maroon Road was the O.screw off Stn 10 on RP876543. See Stn 11 on this plan.

These marks from RP876543 and IS123456 agreed well and were adopted to reinstate Maroon Street alignment.

Station 2 fixed the western side of Grey Street, with bearing to station 8 on SL8654, with suitable occupation at 8 supporting this. This resulted in 50mm of excess along Grey Street in comparison to SL8654, which was accepted.

Distances were used from SL8654 and SL9876 west from stations 2 and 8 to reinstate the western boundary of Lot 123, which is parallel to Grey St. Occupation supported the use of deed distances.

Example 3

Plans searched

NR12, NR123, NAL45, RP2323 & SP123456

Purpose of Survey

This survey of Lot 1 was undertaken to define part of the boundary of the railway corridor (Lot 1) to facilitate engineering works.

Eastern Boundary

NR123 surveys the eastern boundary of Carbine Road 3 chains from the railway centreline.

NR12 shows offsets to the railway boundary from the rail centreline at this location, being 67 links east and 83 links west.

The eastern boundary of Lot 1 was fixed 233 links to the west of the eastern boundary of Carbine Road. This position is confirmed by the presence of a very old railway fence and the location of the current railway centreline.

The eastern boundary of Carbine Road was fixed from the ORT, OIPs and OPs located at/off stations 1, 2 & 4. These marks were in good agreement and adopted.

Southern Boundary

The position of the level crossing has not been previously surveyed.

NR12 contains a noting about "Open Level Crossing Drawing No 7", however this drawing cannot be located by Queensland Rail.

As there was very good agreement with the old railway fence along the eastern boundary and a newer fence along the western boundary (83 links from centreline), the old fence posts from the same fence were adopted to fix the southern boundary around the level crossing. The shape of the fence/boundary is consistent with SP123456.

Example 4

Plans Used: CH311234 & Field Notes, CH311382, RP87653, RP87654 & RP859185.

This survey is to reconfigure three lots into two along a post and wire fence.

It should be noted that the survey is generally over extremely rugged terrain and no surveys have been conducted in the area since RP859185 in 1974.

The line between Stns 19-26 has been re-established by original marks with the presence of occupation of varying ages supporting this alignment. This resulted in a straight line as per CH311234.

The OIP at Stn 23 was re-referenced even though it was placed in the Cen RFP hole on RP876540. This removed the bend, which would have been created at Stn 23. It is noted that RP876540 did not survey beyond Stn 23.

The OIP at Stn 20 was adopted as large excesses exist both north and south of Stn 20, and CH311234 field notes revealed that the OIP references the positioning of the original fence post. This resulted in a bend of 1′30″ at station 20. This was deemed acceptable due to that age of the original survey and the rough terrain

The distance was maintained across the road between Stns 19-20, as surveyed on CH311234. This provides a distance (0·326 shortage) east from Stns 19-24 which has been distributed between Stns 21 and 22 to match old occupation at these Stns.

The alternative solution of adopting a straight line from Stn 3-8 as per CH311234 would make this shortage substantially larger (0·807) between 19-24, even though creating a better angle comparison at Stn 23 to CH311234, but was rejected as it results in moving off the old occupation at Stn 23.

Stn 8 has been established by deed road width from Stn 8a and keeping deed angle from CH311234 to a very old RFP hole found at Stn 8. Stn 16 was fixed from 16a, maintaining deed road width.

Stns 9 & 11 were reinstated deed road width from Stns 8 & 16, creating a bearing difference of 20″ from the line 20-25, which was accepted. Prescence of very old fences supports reinstatement of these two stations.

Example 5 – BFP / Resurvey

The purpose of this plan is to resurvey Lot 5 on BUP1234.

Lot 5 was originally surveyed in 1984 on a building units plan which was regulated by the BUGTA, and is currently regulated by both the LTA and the BCCMA, with guidance given by the RTDPP.

The current registered owner had perceived differences in current size and shape of the lot versus what was shown on BUP1234, and gave instructions to effect a survey to regularise the extents of the lot with the current built form.

Ordinary surveying and titles searches were undertaken, inclusive of a Historical Title Search of the Common Property title. Building approvals for the CTS and historical imagery contemporaneous to the construction of the buildings on BUP1234, were also researched. Nothing in the information reviewed suggests that there have been alterations to the subject building.

On inspection, the building was noted as being predominantly of brick construction, and there was no apparent evidence of alterations to the walls, floors or ceiling/roof that defined the external boundaries. There was a substantial inwards step at Stns A-B-C that was not shown on BUP1234, however it appears to have been part of the original construction. The boundaries of Lot 5 were confirmed by field survey, and irrespective of the aforementioned inconsistency at Stns A-B-C, the external structural elements of the lots have been confirmed as being the original structural elements for Lot 5.

There has been no horizontal or vertical realignment between the subject lot with adjoining lots, and common property is not created nor is common property added to Lot 5, as a result of this plan.

F.2 Water boundary reports

The information provided below is designed to assist with the preparation of survey plans and the relevant reports for surveys involving a water boundary (see section 4.5 *Reporting requirements for surveys*), by illustrating how the required matters can be addressed. It is suggested that where a water boundary report is required, headings be used to distinguish that section of the report from the reinstatement section of the report (see section 3.33 *Reinstatement of boundaries*). Subheadings may also be used for clarity.

F.2.1 Surveying tidal boundaries

Applying the legislation

Exceptions		
• when the boundary of tidal water is right-line • when land is exempt land • when reserved plan status applies	• not a tidal boundary under SMI Act • old rules apply (to surveying or compiling) • old rules apply (to surveying or compiling)	-- s.66 s.65
New source material		
• when land is subject to a new grant or dedication from USL (after 7 May 2010) • subsequent survey of new source material	• survey a feature that satisfies the location criteria • the boundary is the feature identified by the new source material, considering application of the ambulatory boundary principles	s.89
First New Plan of Survey (FNPOS)		
• when natural feature surveyed on original plan, and:	(subject to section 65A, an old plan of survey can be taken to have adopted a natural feature as the boundary where a natural feature exists in practicably the same location as the boundary depicted on the old plan)	
• same feature is adopted in practically same location	• subject to standard 4.3 *Compiling tidal and non-tidal water boundaries*, compile feature in original location **or**	s.80

	• resurvey the feature (field or remotely sensed data)	
• same feature is subject to gradual & imperceptible change	• resurvey the feature in present location (field or remotely sensed data)	s.80
• feature has been subject to sudden change (including construction of a wall)	• compile feature in last location prior to sudden change (usually from original plan, but can be from remotely sensed data prior to sudden change)	s.80
• the land is freehold prior to 7 May 2010, and an alternative feature closer to the water that satisfies location criteria is adopted	• survey the feature that satisfies the location criteria (feature closer to the water than original feature)	s.81
• when **no** natural feature surveyed on original plan, and something that satisfies location criteria exists	• survey the thing that presently exists (e.g. wall that corresponds to original deed)	s.82
• when none of the above apply	• single lot declaration, **or** • multiple lot declaration	s.83 s.93
Subsequent New Plan of Survey (SNPOS)	(survey or compile feature, depending on application of ambulatory boundary principles)	
• when FNPOS surveyed a feature	• subject to standard 4.3 *Compiling tidal and non-tidal water boundaries* , can compile from FNPOS	s.86
• when FNPOS compiled feature	• subject to standard 4.3 *Compiling tidal and non-tidal water boundaries*, can compile from FNPOS	s.86
Esplanades		
• when locating the tidal side of an esplanade	• survey or compile feature, (depending on application of ambulatory boundary principles)	s.90 s.91
• when locating the landward side of an esplanade	boundary is **not** a tidal boundary, but is curvilinear boundary **fixed at time** of exclusion or dedication • originally surveyed (no about dimensions): located at offset from original tidal feature • originally **not** surveyed: located at offset from original tidal feature described in source material or original location of MHWS (when not described)	s.90 s.91
Identification Survey		
• Prior to FNPOS for the land	• Survey or compile the tidal boundary feature that is adopted by the old plan of survey currently authoritative for the land. Adoption of a tidal plane by the old plan of survey is sufficient to have achieved the 'adoption of a natural feature'. • If not possible to make meaningful correspondence between evidence on the current plan of the adopted feature and evidence on the ground of a natural feature, survey a feature compliant with the tidal boundary location criteria (section 72 of the SMI Act).	s.76 s.77
• After FNPOS exists for the land	• Survey or compile the tidal boundary feature identified on the FNPOS (subject to ambulatory principles).	

Survey Report

EXAMPLE 1:

FNPOS where the natural feature surveyed by the old plan of survey satisfies the location

criteria, and the feature exists in practically same location (section 80 SMI Act, compiled)

Tenure and survey history

The land in the grant was originally surveyed on BP921 in 1930. Neither the plan nor field notes describe the natural feature of the Bribie Passage boundary. However, RP5333 surveyed the landward edge of the mangroves as the tidal boundary of Bribie Passage, which incorporates the subject land.

Survey of tidal boundary

This is a FNPOS under section 80 of the SMI Act (compiled). Rectified aerial imagery was overlayed and compared to the boundary identified on RP5333. The imagery confirms that the landward edge of the mangroves is to the greatest practicable extent in the same location as surveyed on RP5333. This was further confirmed by field checks. The landward edge of the mangroves satisfies the location criteria in accordance with section 72 of the SMI Act.

This feature has been adopted as the tidal boundary on this survey and therefore has been compiled from the field nots from RP5333.

EXAMPLE 2:

FNPOS where the natural feature surveyed on an old plan of survey plan satisfies the location criteria, and the feature has been subject to gradual & imperceptible change (section 80 SMI Act, surveyed)

Tenure and survey history

The land granted in 1907 was surveyed on FD223 and was described as being bound by the left bank of Baffle Creek. While FD223 or its field notes do not specify the actual feature surveyed, field investigation at a number of points along the creek identified that the present top of steep bank of the creek correlates to the left bank as measured on FD223. The subject land is under tidal influence as it is approximately 2km downstream from the declared downstream limit for Baffle Creek.

Survey of tidal boundary

This is a FNPOS under section 80 of the SMI Act (surveyed). At the southern end of the subject tidal boundary, the surveyed feature was a relatively low steep bank rising from the water's edge. However, the adopted feature becomes increasingly steeper and higher towards the northern end.

Survey observations show a significant difference in the location of the feature from stations D-E, which has eroded by up to 24m from the location as measured in 1907. There is no evidence that this difference is due to any single sudden event change. It appears reasonable that the change has occurred incrementally as a result of gradual erosion caused by natural flows over the 107 year period since being surveyed on FD223.

The natural feature surveyed satisfies the locations criteria in accordance with section 72 of the SMI Act and has been surveyed in its present location by field survey.

EXAMPLE 3:

FNPOS where a natural feature surveyed on an old plan of survey satisfies the location criteria, and the feature has been subject to sudden change (section 80 SMI Act, compiled)

Tenure and survey history

The land (Portion 101 on NR660) was granted in 1926 by Deed of Grant 2222050. The land was bounded by the eastern bank of Back Creek.

Subsequent surveys of the relevant section of the Back Creek tidal boundary, recorded on RP71777 (1958) and RP722210 (1966), located the boundary by offset from traverse lines.

Original Certificates of Title that issued from RP71777 (Ref 2058888) and from RP722210 (Ref 20966661) record that the subject land in both cases is bounded by Back Creek and therefore the tidal boundary is the eastern bank of Back Creek.

Survey of tidal boundary

This is a FNPOS under section 80 of the SMI Act (compiled). Back Creek has been subjected to

severe annual flooding and regular cyclonic conditions that have severely eroded the bank at its confluence with Trinity Bay. As well, there have been artificial changes to the bank due to construction of a rock revetment wall along Back Creek. The original bank does not exist and there is no comparable feature that could be adopted as the boundary at law of Lot 2 on RP722210.

The tidal boundary of Lot 2 on RP722210 as recorded on SP999951 has been compiled from RP722210 because that plan records the last known location of the tidal boundary which was defined as the eastern bank of Back Creek in the Deed of Grant.

The boundary being compiled from RP721330 is not defined by reference to MHWS or by another line of intersection of a tidal plane and the subject land. The location of the boundary at law is to the greatest practicable extent consistent with the boundary depicted on RP721330 because offsets recorded in the field notes for RP722210 have been adopted to define the location of the tidal boundary.

EXAMPLE 4:

FNPOS where a natural feature is surveyed on an old plan of survey, but an alternate natural feature closer to the water satisfies the location criteria (section 81 SMI Act, surveyed)

Tenure and survey history

The land existed as a freehold grant as at 7 May 2010, as it was granted in 1915. In the deed, the land was described as being bound by the Pioneer River

The land in the grant was surveyed on RP702689 but the plan and field notes did not describe the natural feature and field notes are not available. Using aerial imagery, it would appear that the previous survey adopted the high bank of the Pioneer River as the ambulatory boundary.

Survey of tidal boundary

This is a FNPOS under section 81 of the SMI Act (surveyed). This plan adopts an alternate feature, being the top of a low bank, which is between the original adopted natural feature and the water subject to tidal influence. Its location has been determined by field survey.

The alternate natural feature has been assessed against the first four tidal boundary location criteria in section 72, and:

- It is not subject to tidal inundation under any combination of astronomical conditions and average meteorological conditions because it is *0.5m above the tidal debris line.*
- It is on the landward side of any beaches, fore dunes, mangroves, sea grasses, salt grasses, salt marshes, saltpans, intertidal flats, tidal sand banks and other similar features.
- The location of the tidal boundary is consistent with the public interest.
- The tidal boundary is in a stable location that is sustainable in the long term under normal seasonal events and does not require construction to keep it free from complete or partial inundation or obliteration.

EXAMPLE 5:

FNPOS where an artificial feature is surveyed on an old plan of survey and a feature that satisfies location criteria exists (section 82 SMI Act, surveyed)

Tenure and survey history

The land was granted in 1961. In the deed, the land was described as being bound by "Brisbane River". The land in this reach of the Brisbane River was part of a river improvement undertaken by Brisbane City Council.

The land was depicted as being bound by a "retaining wall" along the Brisbane River and there is no clear statement showing the materials of the wall or the part of the wall adopted on RP12589.

Survey of tidal boundary

This is a FNPOS under section 82 of the SMI Act (surveyed). The survey identified a rock and concrete revetment wall exists on the Brisbane River frontage of Lot 19. The construction appears

to be similar to other walls in the vicinity, which records indicate were constructed mid-century. Repairs to the wall appear to be evident in places, but they do not alter the physical location of the wall. Aerial photography shows the existence of a wall from at least the late 1950's along the river frontage. In the absence of evidence to the contrary, the current wall appears to be the wall constructed prior to the issuing of the original deed.

This plan adopts a boundary based on the top of the revetment wall. Its location has been determined by field survey. The location of the tidal boundary is consistent with the public interest.

It is not subject to tidal inundation under any combination of astronomical conditions and average meteorological conditions (criterion 1) as it is above Mean High Water Springs defined by the Semidiurnal Tidal Planes 2012 table and site inspections revealed 'high tide" near the base of the revetment wall.

EXAMPLE 6:

SNPOS where the natural feature exists in practically same location as the FNPOS (section 86 SMI Act, compiled)

A first new plan of survey SP234567 was registered for the subject land on 17/09/2010 pursuant to section 80 of the SMI Act.

This is a SNPOS under section 86 of the SMI Act (compiled). On the first new plan of survey, the top of the bank of the Fitzroy River was adopted as the boundary. Site inspection has confirmed that recent flooding events have not impacted on the bank of the river and check measurements confirm that the feature is to the greatest practicable extent in the same location. Therefore, the boundary has been compiled from SP234567.

EXAMPLE 7:

SNPOS of a natural feature subject to gradual & imperceptible change since FNPOS (section 86 SMI Act, surveyed)

A first new plan of survey SP222444 was registered for the subject land on 22/02/2011 pursuant to section 80 of the SMI Act. SP222444, which compiled the tidal boundary from XW767, adopted the top of the lower bank of the Logan River as the natural feature representing the tidal boundary.

This is a SNPOS under section 86 of the SMI Act (surveyed). Field survey has located that feature in its present location, which varies by up to 1.5m from that shown on SP222444 (see attached sketch). The vegetation and bank formation does not provide any evidence of human interference or sudden event. We have concluded that the change has been gradual since the original survey (XW767) in 1942 and that SP222444 should have resurveyed the boundary in the new location rather than compiling the boundary from XW767.

EXAMPLE 8:

SNPOS of a natural feature subject to sudden change since FNPOS (section 86 SMI Act, compiled)

A first new plan of survey SP114567 was registered for the subject land on 11/12/2012 pursuant to section 80 of the SMI Act. On the first new plan of survey, the top of the bank of the Herbert River was adopted as the boundary.

This is a FNPOS under section 86 of the SMI Act (compiled). Field inspection and measurements reveal that a timber revetment wall has been constructed along the riverbank to straighten the alignment of the bank. The original natural feature surveyed on SP114567 no longer exists. As the change to the riverbank is the result of a sudden event, the top of the bank of the Herbert River has been compiled in the location as surveyed on SP114567.

EXAMPLE 9:

A survey of new tenure from USL (section 89) on the 'water side' of a tidal boundary, where the adjoining lots on the landward side of the common length of tidal boundary are

identified by an old plan of survey (section 76) and a first new plan of survey (section 80 SMI Act)

New Lot 113 is surveyed to issue a new lease from the Green River, and this plan will represent new source material subject to section 89 of the SMI Act.

The watercourse boundary of new Lot 113 is the relevant parts of the tidal boundaries of Lot 14 on SP199160 (A-B) and Lot 2 on SP314041 (B-C). SP199160 is an old plan of survey, at the time of this survey a first new plan of survey has not occurred for Lot 14 (on the landward side of the tidal boundary).

The boundary of adjoining Lot 14 on SP199160 (on the landward side) has been determined subject to section 76 of the SMI Act (the current adopted natural feature rule – prior to registration of a first new plan of survey for the land). The current feature adopted as the tidal boundary by SP199160 (A-B) is the landward edge of the mangroves, this has been confirmed by field inspection.

SP314041 is a first new plan of survey subject to section 80 of the SMI Act. The relevant part of the adjoining tidal boundary (B-C) is the top of the bank feature shown on SP314041.

EXAMPLE 10:

Identification survey where the old plan of survey clearly adopted a natural feature as the tidal boundary, and the feature exists in practically same location (section 76 SMI Act, compiled)

Survey of tidal boundary

The tidal boundary of the subject land has been identified under section 76 of the SMI Act (compiled). The natural feature adopted for Lot 2 by RP15333 was the landward edge of mangroves. Field checks determined the tidal boundary has remained generally in the same location and was compiled from the field notes for RP15333 for this survey. Rectified aerial imagery was overlayed and compared to the boundary identified on RP15333, confirming the landward edge of the mangroves generally remains in the same location as last surveyed.

EXAMPLE 11:

Identification survey where the old plan of survey did not clearly adopt a natural feature and a natural feature satisfying the tidal boundary location criteria is adopted (section 77 SMI Act, surveyed)

Survey of tidal boundary

The evidence of the tidal boundary shown for Lot 3 on RP15333 does not correlate to the natural features found on the ground. Subject to section 77 of the SMI Act, a natural feature generally compliant with the tidal boundary location criteria has been identified, being the top of the bank adjacent to the foreshore. The tidal boundary has been surveyed in its current location.

F.2.2 Surveying non-tidal watercourse boundaries

Applying the legislation

Exceptions		
• when the watercourse is internal or right-line • when land is exempt land • when reserved plan status applies	• not a watercourse boundary under SMI Act • old rules apply (to surveying or compiling creek/river) • old rules apply (to surveying or compiling creek/river)	-- s.95 s.65
New source material		
• when land is subject to a new grant or dedication from USL, or involves a dedication for a new part of non-tidal watercourse or a lake (i.e. s.51 *Land Title Act 1994*, s.290JA *Land Act 1994*) • subsequent survey of new source material	• survey a feature that satisfies the location criteria	s.116

	• the boundary is the feature identified by the new source material, considering application of the ambulatory boundary principles	
First New Plan of Survey (FNPOS)		
• when natural feature surveyed on a previous plan satisfies the location criteria, and:	(subject to section 65A, an old plan of survey can be taken to have adopted a natural feature as the boundary if a natural feature exists in practicably the same location as the boundary depicted on the old plan)	
• feature exists in practically same location	• subject to standard 4.3 *Compiling tidal and non-tidal water boundaries*, compile feature in existing location (usually from plan that last surveyed creek/river), **or** • resurvey the feature (field or remotely sensed data)	s.108
• feature subject to gradual & imperceptible change	• resurvey the feature in present location (field or remotely sensed data)	s.108
• feature subject to sudden change	• compile feature in last location prior to sudden change (usually from plan that last surveyed creek/river, but can be from imagery prior to change)	s.110
• when natural feature surveyed on a previous plan does not satisfy the location criteria	• survey a feature that satisfies the location criteria (a feature further from water than previous feature)	s.108
• when **no** natural feature surveyed on a previous plan, and:	(e.g. creek/river excluded from lot but not surveyed, centre thread last run)	
• **no** evidence of sudden change	• survey a feature that satisfies criteria (field or remotely sensed data)	s.108
• evidence of sudden change	• single lot declaration, **or** • multiple lot declaration	s.109 s.120
Subsequent New Plan of Survey (SNPOS)	(survey or compile feature, depending on operation of ambulatory boundary principles)	
• when FNPOS surveyed a feature	• subject to standard 4.3 *Compiling tidal and non-tidal water boundaries*, can compile from FNPOS	s.113
• when FNPOS compiled feature under s.108	• subject to standard 4.3 *Compiling tidal and non-tidal water boundaries*, can compile from FNPOS	s.113
• when FNPOS compiled feature under s.110 (feature had been subject to sudden change)	• compile from FNPOS	s.113
Non-tidal boundary (lake)		
Where a lake boundary feature is surveyed on a previous plan, and:	(the definition of lake in section 63 includes a lagoon, swamp or other natural collection of water)	
• feature exists in practicably the same location	• subject to section 118, compile the lake boundary from the previous plan, or • resurvey the lake boundary feature (field or remotely sensed data)	s.119
• feature is subject to gradual and imperceptible change	• resurvey the lake boundary in its present location (field or remotely sensed data)	s.119
• feature is subject to sudden change	• compile lake boundary in last location prior to sudden change (usually from plan that last surveyed lake, but can be from imagery prior to change)	s.119
New lake boundary	• survey a new lake boundary feature according to the lake boundary rule	s.119
Identification Survey		

• Prior to FNPOS for the land	• Survey or compile the non-tidal boundary feature that is shown by the old plan of survey currently authoritative for the land. A line of intersection of a particular level of water flow with land is sufficient to have achieved the adoption of a natural feature, but the adoption of a notional centre thread of the watercourse is not sufficient. • If not possible to make meaningful correspondence between evidence on the current plan of the adopted feature and evidence on the ground of a natural feature, survey a feature compliant with the non-tidal boundary (watercourse) location criteria (s.100 of the SMI Act). • application of the current adopted natural feature (non-tidal) rule (s.103) or the current adopted natural feature rule (non-tidal) exception (s.104) cannot result in a boundary feature adopted for the lot being located closer to the opposite side of the watercourse than it was located immediately before commencement.	s.103 s.104 s.105
• After FNPOS exists for the land	• Survey or compile the tidal boundary feature identified on the FNPOS.	

Survey Report

EXAMPLE 12:

FNPOS of natural feature surveyed on old plan of survey that satisfies the location criteria, and the feature exists in practicably the same location (section 108 SMI Act, compiled)

This is a FNPOS under section 108 of the SMI Act. The creek boundary of Lot 4 is compiled from XW117. Measurements taken at stations A and B confirm that the original survey adopted the top of the lower bank of Apple Creek. The feature satisfies the location criteria in section 100 of the SMI Act in that it is a stable feature (as evidenced by the large trees located along the bank) and is not in the bed of the watercourse.

The creek bank was plotted from original field notes and overlayed onto current aerial photography[12]. The comparison shows that the creek bank is to the greatest practicable extent in the same location as surveyed on XW117. The survey does not create any new right line boundaries that intersect the creek and satisfies the requirements of standard 4.3 *Compiling tidal and non-tidal water boundaries* of the Cadastral Survey Requirements.

EXAMPLE 13:

FNPOS of natural feature surveyed on old plan of survey that satisfies the location criteria, and the feature has been subject to gradual & imperceptible change (section 108 SMI Act, surveyed)

Banana Creek was surveyed on plans XW312 and XW340.

The land around the creek is generally flat and the bank is well defined and vegetated. The natural feature adopted as the boundary, being the top of the bank, satisfies the location criteria. Measurements on the southern end of Banana Creek between stations A-B and C-D give good agreement with the original location. However, north of station B (between B-C) there has been a significant movement east towards the lot on the other side of the creek. Differences in this section were up to 18·5m from the original location.

There is no evidence of artificial interference or sudden events. It would appear that the movement, being on a large bend in the creek, has been by gradual and imperceptible means over

[12] The report would state the actual photography used, e.g. 9248 Surat 2015 Program Aerial Photography, Film no. QAP4994, Frame no. 6325-6329.

the 105 years since the original surveys. Therefore, the current location of the bank has been determined by field survey (utilising RTK GNSS) under section 108 of the SMI Act.

The eastern bank of Banana Creek forms the boundary of Lot 7 on XW229. Plotting this original creek traverse for the eastern bank with the current location of the western bank shows that the new location of the western bank (our subject lot) affects the past survey of the location of Lot 7 on XW229 by up to 6·6m (as shown on the sketch). As the land on the other side of the creek is affected by the current location of Banana Creek, the owner of Lot 7 on XW229 has been notified under section 20 of the SMI Regulation.

EXAMPLE 14:

FNPOS of natural feature surveyed on old plan of survey that satisfies the location criteria, and the feature was subject to sudden change (section 110 SMI Act, compiled)

The land was previously surveyed on XW845 in 1916. However, site inspection revealed that the creek is located in a significantly different location to that shown on XW845.

In 1982, XW932 surveyed the land on the other side of Cherry Creek, following the construction of the bridge over the creek. XW932 shows that there was significant works along Cherry Creek associated with the bridge, which effectively relocated the creek to its present location. Therefore, the creek has been subject to sudden change and, as section 110 of the SMI Act applies, the creek boundary has been compiled in its original location.

The creek points were calculated from the original creek traverse in the field notes of XW845.

EXAMPLE 15:

SNPOS of feature that exists in practically same location as FNPOS (section 113 SMI Act, compiled)

A first new plan of survey (SP12345) was registered for the subject land on 30/9/2012, under section 108 of the SMI Act. Check measurements confirmed that the location of Date Creek (top of the bank) has not changed since SP12345. Therefore, this plan being a subsequent plan of survey under section 113 of the SMI Act, the boundary of Date Creek has been compiled from SP12345.

EXAMPLE 16:

SNPOS of natural feature subject to gradual & imperceptible change since FNPOS (section 113 SMI Act, surveyed)

A first new plan of survey (SP112233) was registered for the subject land on 11/11/2010, under section 108 of the SMI Act. Field measurements show that on the top of the bank of Elderberry Creek has eroded by up to 2·5m on the outside of the bend. BOM records for Elderberry Creek at the Main Rd recording station do not indicate any significant flooding has occurred since the FNPOS, and there is no evidence of any artificial interference.

This is a SNPOS under section 113 of the SMI Act (surveyed). The top of the bank, although located further into the lot, is a well-defined feature that has significant vegetation and appears to be stable. This feature satisfies the location criteria and therefore has been surveyed in its present location.

EXAMPLE 17:

SNPOS of natural feature subject to sudden change since FNPOS (section 113 SMI Act, compiled)

A first new plan of survey (SP54321) was registered for the subject land on 1/6/2012, under section 108 of the SMI Act. A site visit revealed that there has been "restitution" earthworks conducted along the entire length of Fig River leaving no trace of the original top of bank as shown on SP54321.

This is a SNPOS under section 113 of the SMI Act (compiled). Application of the ambulatory boundaries principles means that we have compiled the location of Fig River in its last known

location from the river traverse on SP54321.

EXAMPLE 18:

SNPOS where the FNPOS compiled the water boundary under section 110 (section 113 SMI Act, compiled)

A first new plan of survey (SP332211) was registered for the subject land on 7/2/2014, under section 110 of the SMI Act.

This is a SNPOS under section 113 of the SMI Act (compiled). SP332211 verified that the top of bank of Grape Creek was subject to sudden change by flooding in 2011 and therefore the location at law of the boundary does not change and is compiled from the source information of the feature prior to the sudden change under section 110. The location of Grape Creek is therefore compiled from the original plan XW999.

EXAMPLE 19:

Non-tidal boundary (Lake) feature report (section 119 SMI Act, compiled)

The source material that relates to the swamp boundary of the subject land is plan K12345. This and subsequent surveys of the land refer to the natural feature boundary as Boggy Swamp. Section 62 of the SMI Act includes a swamp under the definition of 'lake'.

Inspection was made of the outermost extent of the bed and banks of the swamp and check measurements were made in various locations. A comparison of these features indicate that the swamp boundary remains practicably in the same location as last surveyed on RP712345. Subject to section 119 of the SMI Act, the Boggy Swamp boundary of lot 1 has been compiled from the field notes of plan RP712345.

EXAMPLE 20:

Identification survey where the old plan of survey identified a compliant natural feature as the non-tidal (watercourse) boundary (section 103 SMI Act, surveyed)

This is an identification survey of Lot 2 on RP21455. RP21455 adopted the top of the high bank of the Maroon River as feature representing the non-tidal (watercourse) boundary. The location of the watercourse boundary feature has been subject to gradual and imperceptible accretion since last surveyed by RP21455. The non-tidal boundary feature has been surveyed in its current location.

EXAMPLE 21:

Identification survey where the old plan of survey did not identify a compliant natural feature as the non-tidal (watercourse) boundary, and a suitable boundary feature was identified (section 104 SMI Act, surveyed)

This is an identification survey of Lot 1 on RP21456. The boundary of RP21456 was compiled from RP1321 which was surveyed in 1889. RP1321 did not clearly adopt a natural feature to represent the non-tidal boundary watercourse. Therefore section 103 of the SMI Act could not be applied. Subject to section 104 of the SMI Act, the top of the low bank against the Maroon River has been adopted as the watercourse boundary of Lot 1 on RP21456. The adopted feature complies with the non-tidal boundary (watercourse) location criteria of section 100 of the SMI Act.

Subject to section 105 of the SMI Act, the adopted natural feature boundary is not generally closer to the opposite side of the watercourse than the location of the boundary at law prior to commencement of Part 7 of the SMI Act.

Appendix G. Land Services – General Contact List

Email address list to contact the senior land officer in the relevant local departmental office.

Regional Team	Local Government	Contact email
Aboriginal Local Governments Team One	Aurukun Shire Council	lasslsteam1enq@resources.qld.gov.au
	Cherbourg Aboriginal Shire Council	
	Doomadgee Aboriginal Shire Council	
	Hope Vale Aboriginal Shire Council	
	Kowanyama Aboriginal Shire Council	
	Lockhart River Aboriginal Shire Council	
	Mapoon Aboriginal Shire Council	
	Napranum Aboriginal Shire Council	
	Palm Island Aboriginal Shire Council	
	Pormpuraaw Aboriginal Shire Council	
	Woorabinda Aboriginal Shire Council	
	Wujal Wujal Aboriginal Shire Council	
	Yarrabah Aboriginal Shire Council	
Team One	Boulia Shire Council	lasslsteam1enq@resources.qld.gov.au
	Burke Shire Council	
	Cairns Regional Council	
	Carpentaria Shire Council	
	Cassowary Coast Regional Council	
	Cloncurry Shire Council	
	Cook Shire Council	
	Croydon Shire Council	
	Douglas Shire Council	
	Etheridge Shire Council	
	Flinders Shire Council	
	Hinchinbrook Shire Council	
	Mareeba Shire Council	
	McKinlay Shire Council	
	Mornington Shire Council	
	Mount Isa City Council	

	Northern Peninsula Area Regional Council	
	Richmond Shire Council	
	Tablelands Regional Council	
	Torres Shire Council	
	Torres Strait Regional Council (DOGIT only)	
	Torres Strait Regional Council (not DOGIT only)	
	Weipa Town Authority	
Team Two	Burdekin Shire Council	LST2Enq@resources.qld.gov.au
	Charters Towers Regional Council	
	Townsville City Council	
Team Two	Barcaldine Regional Council	LST2Enq@resources.qld.gov.au
	Diamantina Shire Council	
	Longreach Regional Council	
	Blackall-Tambo Regional Council	
	Winton Shire Council	
Team Two	Barcoo Shire Council	LST2Enq@resources.qld.gov.au
	Isaac Regional Council	
	Mackay Regional Council	
	Whitsunday Regional Council	
Team Three	Balonne Shire Council	lasst3@resources.qld.gov.au
	Banana Shire Council	
	Bulloo Shire Council	
	Bundaberg Regional Council	
	Fraser Coast Regional Council	
	Gladstone Regional Council	
	Livingstone Shire Council	
	Maranoa Regional Council	
	Murweh Shire Council	
	North Burnett Regional Council	
	Paroo Shire Council	
	Quilpie Shire Council	
	Rockhampton Regional Council	

	South Burnett Regional Council	
	Western Downs Regional Council	
Team Four	Brisbane City Council	LSSEQ@resources.qld.gov.au
	City of Gold Coast	
	City of Moreton Bay	
	Goondiwindi Regional Council	
	Gympie Regional Council	
	Ipswich City Council	
	Lockyer Valley Regional Council	
	Logan City Council	
	Noosa City Council	
	Redland City Council	
	Scenic Rim Regional Council	
	Somerset Regional Council	
	Southern Downs Regional Council	
	Sunshine Coast Council	
	Toowoomba Regional Council	

Appendix H. Keywords

SIG/2021/5792; Cadastral Survey Requirements; CSR; Cadastral; Survey Requirements; Survey; Physical feature boundaries; Easements; Leases; GNSS; Plan Standards; Survey standards; Survey guidelines.

Call: 13 QGOV (13 74 68)

Visit: www.nrmmrrd.qld.gov.au