Australian Government

Geoscience Australia

GEOSCIENCE AUSTRALIA
TOPOGRAPHIC DATA AND MAP SPECIFICATIONS

FOR

GEODATA TOPO-250K Series 2 VECTOR PRODUCT,

GEODATA TOPO-100K Series 1 VECTOR PRODUCT

&

NTMS SERIES 1:250 000 & 1:100 000 SCALE

TOPOGRAPHIC MAP PRODUCTS

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Use of the Technical Specifications

The GEOSCIENCE AUSTRALIA TOPOGRAPHIC DATA AND MAP SPECIFICATIONS are made up of 3 sections.

Section 1 specifies the GEODATA products. GEODATA is digital spatial data derived from topographic map products. The data is designed to be suitable for use in Geographic Information Systems. Key characteristics of GEODATA are national consistency and assured quality.

Section 2 specifies the National Topographic Map Series (NTMS) products. NTMS maps are hard copy topographic maps produced primarily to support environmental and resource planning and for navigation. As for GEODATA key characteristics of the NTMS products are national consistency and assured quality.

Section 3 specifies the working database used to store the information needed to produce the GEODATA and NATMAP products, material to be supplied and the submission and testing process.

A number of Appendices support the three sections.

Sections 1 and 2 are designed to allow use outside this combined specification. However, for production all sections of the specification should be read together, as specifications for one product impact on the others. Similarly the specification covers both 1:100 000 and 1:250 000 scale products. Elements specific to one scale or the other are identified in the specification.

Appendix A - Data Dictionary, gives information on feature classes including cross references to enable the correct feature class to be selected, on secondary tables and on the symbols to be used on the maps.

Users should always refer to the *Entity Cross Reference* list in Appendix A as a first step, to ensure the entity they are dealing with is listed, as many entities are known by different names by different individuals, organisations and in different States. The column titled 'Commonly used term' of the *Entity Cross Reference* lists the known names for features while the 'Feature Class' column guides the user to the name used for the feature in the specifications.

Distribution and Suggestions for Change

These documents are subject to the Quality Assurance procedures implemented by Geoscience Australia. Digital copies, and any hard copies made thereof, not registered and identified as controlled will not be automatically updated and should not be regarded as a definitive reference.

Controlled copies of these documents will be maintained by Geoscience Australia.

Suggestions for improvements or feedback on problems encountered using the specifications are welcomed. An Action Request form will be used to provide feedback, alternatively written comments may be sent to the Mapping Program, Geoscience Australia. Holders of controlled digital copies of the specifications will be given Action Request forms.

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1. Scope of this document

This document sets out the Technical Specification for Geoscience Australia's 1:250 000 and 1:100 000 scale GEODATA topographic vector products, GEODATA TOPO-250K series 2 and TOPO-100K series 1.

This specification sets out the minimum quality standard for the data in terms of its planimetric and altimetric accuracy, geometrical aspects, feature content, topological structure and the rules used in the collection of the data.

The GEODATA TOPO-250K series 2 and TOPO-100K series 1 spatial data is derived from published 1:100 000 and 1:250 000 topographic maps updated with information from Geoscience Australia and other agencies. The bulk of these maps are from the National Topographic Map Series (NTMS) published by Geoscience Australia / AUSLIG, the Royal Australian Survey Corps and from the Joint Operations Graphic series (JOG) published by the Royal Australian Survey Corps. However, in a few cases where maps in these series do not exist mapping from State agencies is used.

2. The Data Model

2.1 The Feature-Based Data Model

The GEODATA Vector Products use a feature-based data model described by the following definitions:

ENTITY: An entity is a real world phenomenon not divisible into phenomena of the same kind.

FEATURE INSTANCE: A feature instance is an abstraction of an entity represented in digital form. The description of a feature instance encompasses only selected properties of that entity. Feature instances can also be referred to as features.

ATTRIBUTE: An attribute is a particular property of a feature or of a feature's property. Attributes can be spatial (or locational) and aspatial (or non-locational).

ATTRIBUTE VALUE: Attribute value is the value assigned to an attribute, either for a feature instance or its attributes.

FEATURE CLASS: A feature class is a group of feature instances defined by a set of rules and having common attributes and relationships that are the properties of the corresponding real world phenomena.

ENTITY CLASS: A group of entities of the same kind, matching the members of a feature class.

The structure of a feature instance in the feature based data model can be summarised as:

feature instance = [*spatial object* + *attribute object*]

Where *spatial object* and *attribute object* are defined as:

SPATIAL OBJECT: The addition of all the locational attributes of the feature instance in the form of geometrical objects such as points, lines or polygons. Spatial objects carry a spatial address that consists of one or more couplets (x, y) or triplets (x, y and z) of coordinates. In the feature-based data model, topological relationships will be carried as part of the spatial object whenever the transfer formats support them. Types of spatial objects used in GEODATA are:

Point

Geometric representation defined by a single 'x, y' co-ordinate couplet or an 'x, y, z' triplet. Three special points are used in the data model.

Entity Point - used to locate point features or area features represented by a point.

Paracentroid - point within a polygon used to hold information about that polygon. This point is topologically linked to the bounding chains of the polygon.

Every polygon will contain one paracentroid. This point type is sometimes known as a centroid or as a polygon label point.

Node - A point that is an intersection of two or more chains or an end point of a chain. Nodes may carry attribute information.

Chain

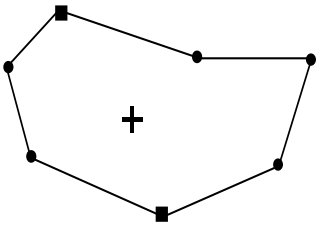
A sequence of non-intersecting line segments bounded by nodes (not necessarily distinct) at each end.

Chains will reference their start and end nodes. Coordinates along a chain are referred to as vertices in this specification.

When a chain is defining a polygon boundary it will reference the polygons to the left and right of the chain with respect to the direction of digitisation.

Polygon

A bounded, continuous region consisting of an interior area, an outer boundary defined by a set of chains, and zero or more, non-nested inner boundaries also defined by sets of chains.



Within a layer the polygons are mutually exclusive. Every polygon will contain one and only one paracentroid.

ATTRIBUTE OBJECT: The non-locational information about a feature instance. These data identify the feature class and the aspatial attributes of a specific instance of the feature class. The attribute object is composed of one or more attributes.

Example 1

Spatial Object	**Attribute Object**	
Chain (x_1,y_1 .....x_n,y_n)	Attribute	Attribute Value
	Feature Class:	Road
	Name:	Hume Highway
	Classification:	1 *(represents 'Dual Carriageway')*
	Surface Type:	1 *(represents 'Sealed')*
	National Route Number:	31

Example 2

Spatial Object	**Attribute Object**	
Polygon	Attribute	Attribute Value
	Feature Class:	Island
	Name:	Fraser Island
	State:	5 *(represents 'QLD'))*

2.2 Data Aggregation

The spatial object and attribute object as defined above are the primitive components of data. These data objects are grouped together in a hierarchy which is used for the capture, manipulation and transfer of the data.

2.2.1 Themes

The digital spatial data contained in the GEODATA products are primarily derived from a combination of existing map production material, base digital data, imagery and authorised source material. The data on the source material may be divided into themes, each theme containing logically related geographic information. There are five themes in the 1:250 000 and 1:100 000 Topographic Vector Products - Hydrography, Infrastructure, Relief, Reserved Areas and Vegetation.

2.2.2 Layers

All GEODATA topographic vector data is topologically structured and this is reflected in the way the data is structured and transferred to the client. Each theme consists of one or more layers which are composed of different spatial objects and which convey the topological relationships of the data.

GEODATA Vector Products may contain four types of layers:

- Linear
- Polygon
- Point
- Point/Linear

Linear layers contain chain features representing entities such as windbreaks or pipelines.

Polygon layers contain chains and paracentroids representing area features such as lakes or built-up areas.

Polygons in the same layer cannot overlap.

Point layers contain entity point features representing entities such as buildings or lighthouses.

Point / Linear layers contain a combination of entity point and chain features such as roads and bridges.

2.3 Area of File Coverage

The area covered by each file of spatial data is described as a tile. The tile boundaries are shown in Appendix H. TILE AND MAP BOUNDARIES GUIDE.

3. TOPO-250K and TOPO-100K Data Structure

The GEODATA topographic vector data is topologically structured and additional information about the features will be conveyed by attributes which are held in attribute tables.

All GEODATA topographic vector data share a number of common characteristics which are set out below.

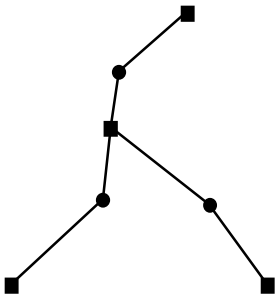
3.1 Spatial Data Integrity

GEODATA topographic vector data will comply with the following rules for spatial data integrity. The rules for maximum allowable errors are described in Appendix J. These rules will be enforced with a 95% confidence level.

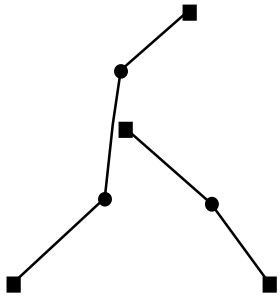
The spatial data will have no overshoots, undershoots, broken lines, pseudo nodes or other artefacts of the data capture process. These possible errors in the data are illustrated below. Pseudo nodes will be acceptable where:

- a feature must be broken due to having more than 500 points
- the specification requires a related feature to be placed on a node, for example, railway stations
- symbology or other map attributes change.

Undershoot in data.

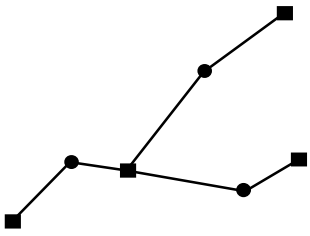


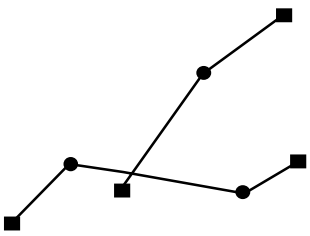
Correct Representation



Incorrect Representation

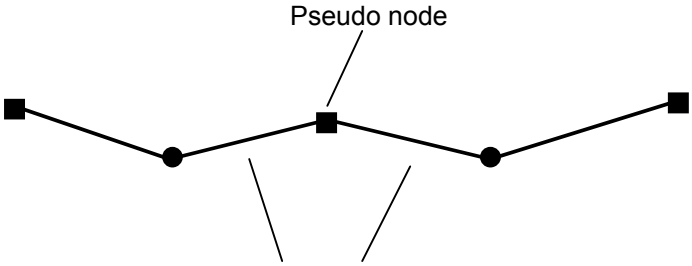
Overshoot in data.





Correct Representation Incorrect Representation

Pseudo-node in data



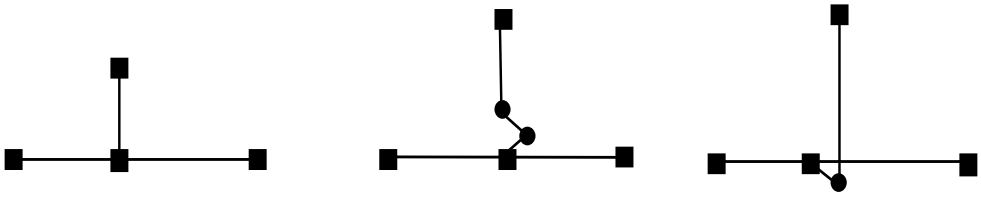
Same feature with identical attribute values.

Broken line in data

Correct Representation

Incorrect Representation

Artefacts



Linear Feature Spike in Linear Feature

Artefacts such as spikes and deviations of a linear feature from its expected position will be removed from the data to the extent that they will not be visible when the data is plotted or displayed at half its nominal scale ie. 1:125 000 for 1:250 000 data or 1:50 000 for 1:100 000 data.

- All linear features within the same layer will be broken by a node at intersections or at the point where an attribute of the feature changes. A node will exist at these intersection points.
- All polygon boundaries must be closed.
- Every polygon feature will contain a paracentroid which may be used for the positioning of information about the feature.

- Adjacent polygons within a tile will not have an identical set of attributes, once the UFI (1:250 000 scale only) and q_info has been excluded.

- Within a layer there will be no coincident features of the same spatial object type, for example, a line cannot be coincident with another line. Two features in separate layers, which share the same physical position on the source material, will have coincident spatial addresses.

3.2 Point Density Reduction

Point density is controlled so that the locational information is conveyed by the minimum number of points while still retaining the smooth shape of the source information.

The following specifications apply for data point reduction:

- The length of a line segment will be equal to, or greater than 0.000 22 degrees (approx. 25m) for the 1:250 000 product and 0.000 10 degrees (approx. 10m) for the 1:100 000 product. However, for features other than roads, feature instances of less than 20 points will not be filtered (i.e.: such features are an exception to this rule). Sections of the chains, which must be coincident with such features, will also be an exception to the rule.

- The length of a line segment will not be greater than 0.253 68 degrees (approx. 20 000m for the 1:250 000 product and 0.147 degrees (approx 8000m) for the 1:100 000 product).

- For Tile Edge features in all layers the distance between vertices will not exceed 0.002 degrees (approx. 200m).

3.3 Resolution of Co-ordinates

Co-ordinates of all spatial objects will be quoted to the nearest 0.000 01 degrees (approximately 1m) for both the 1:250 000 and the 1:100 000 products.

3.4 Unique Feature Identifier Attribute (TOPO-250K only)

A Unique Feature Identifier (UFI) will be an alphanumeric string attached to each feature instance as an attribute. The UFI will be unique on a national basis and is expected to facilitate the efficient incremental update of GEODATA features.

The Unique Feature Identifier will have the components:

1. A scale identifier code.

2. A theme/layer identifier code.

3. A sequential number allowing for up to 100 000 000 feature instances which is unique for each scale/theme combination. These numbers have been allocated in blocks of 100 000 to each tile.

For example; the code BA00000237 would indicate feature instance 237 in the 1:250000 Hydrography theme. Note: leading zeros will be included for sequential number values less than 10000000.

Scale and theme/layer identifier codes will be in upper case.

The following scale and theme codes have been specified for GEODATA data. The ranges of UFI numbers allocated to tiles are listed at Appendix K (and are only applicable to 1:250 000). Note: allocation of numbers within a tile will not necessarily be in numeric sequence; gaps between numbers are acceptable.

Scale Identifier		Theme Identifier	
B	1:250 000	A	Hydrography
		B	Infrastructure
		C	Framework
		D	Relief
		E	Coastline & State Borders (not used for Topo products)
		F	1:10M General (not used at 1:250 000)
		G	Vegetation
		H	Reserved Areas

3.5 Data Quality Pointer Attribute

Every feature instance will have attached to it a data quality attribute. This attribute, named *q_info* (from Quality INFOrmation), will be nationally unique and is used to point to a record in the Data Quality Table. The Data Quality Table is discussed in chapter 4.3 Feature Quality Information.

The data quality attribute will be an eight character string with two component parts:

1. A map sheet identifier of 5 characters. This will identify the map sheet which is the basis for information in the related record in the Data Quality Table.

2. A number which is unique for the map sheet. Allowance has been made for up to 1000 data quality records per tile.

For example, a *q_info* value of F53147 would indicate that the information in the data quality table is based on the 1:250 000 sheet of SF53-14, Alice Springs and that it is the seventh data quality pointer for this map sheet. The prefix of S is common to all 1:250 000 scale map sheets and has been dropped to save space.

For TOPO-100K tiles the four digit map number will be preceded by the character "S" eg. S90291.

Alpha characters in the q-info attribute will be in upper case.

3.6 Positional Accuracy

The positional accuracy of spatial data is a statistical estimate of the degree to which planimetric co-ordinates and elevations of features agree with their real world values. The planimetric accuracy attainable in the GEODATA Topographic Vector data will be composed of errors from three sources:

1. The positional accuracy of the source material

2. Errors due to the conversion processes.

3. Errors due to the manipulation processes.

3.6.1 The Positional Accuracy of the Source Material

This specification cannot prescribe a figure for the planimetric accuracy of the existing source material (repromat) used for capture of GEODATA as it has already been produced. There is an expectation that the source data complies with the following statement.

Not more than 10% of well defined points will be in error by more than 0.5mm measured on the source material.

Well defined points are those points which are readily identified on the ground and in the data and have not been offset to allow for symbolisation of surrounding features. They are usually at intersections.

Statistically, this relates to a standard deviation on the map (S_m) of 0.31 mm.

New features will be captured to comply with this statement.

SPOT imagery used for the updating of data will have positional accuracy of 30 metres and TM imagery 60 metres. Higher resolution imagery may be supplied for TOPO-100K revision purposes.

3.6.2 Errors Due to the Conversion Processes

The errors due to the digitising process depend on the accuracy of the digitising table set-up or the scanner resolution, systematic errors in the equipment, errors due to software and errors specific to the operator. An accepted standard for digitising is that the line accuracy should be within half a line width. The majority of features in the GEODATA have a line width of 0.2 mm or greater. The half line width is taken as 0.1 mm and this is interpreted as one standard deviation S_{data} for the distribution of errors.

The expectation is that the degradation caused by the scanning processes will be minimal and will be the result of thinning lines to a co-ordinate string. This may result in an added error of +/- 0.2 mm for the thickest lines digitised.

The inaccuracy in setting up the test digitisation and making the measurement S_{test} is estimated to be in the same order of inaccuracy as the digital data being checked. The errors of the digital data and the system used to check this digital data combine using the formula.

$$\begin{aligned} S_{\text{limit}} &= \sqrt{\left(S_{data}\right)^2 + \left(S_{test}\right)^2} \\ &= \sqrt{\left(0.1\right)^2 + \left(0.1\right)^2} \\ &= 0.14mm \end{aligned}$$

The limit for the standard deviation of the measured errors, S_{limit} = 0.14 mm, and thus two standard deviations, which 95 % of points should lie within, is 0.28 mm. The mean of the errors between the data and the test points should be zero, since there should be no bias in the errors, such as a consistent offset in the position of features. A sample of well defined points in data will be compared with their coordinates derived from the source material and a test statistic of the mean plus two standard deviations must not be greater than 0.28 mm.

As well as the errors in the conversion process outlined above, linear features are also subject to filtering as part of the point density reduction process. If the filtering parameters are not carefully selected the resulting linear feature may not retain sufficient likeness to the source material. To ensure linear features which are faithful to the shape and length of the source material, the following specification will be satisfied.

The separation between the feature instance on the source material and its GEODATA digital representation will not be greater than 0.2 mm at source material scale. That is, 50 m for the 1:250 000 product, or 20 m for the 1:100 000 product.

3.6.3 Errors Due to the Manipulation Processes

The processes used during data manipulation will introduce an error S_{man} not greater than 10% of the S_{data}.

3.6.4 Absolute Planimetric Accuracy

The total statistical error from the source material and digitising process (S_d) discussed above is given by:

$$\begin{aligned} S_{absolute} &= \sqrt{(S_m)^2 + (S_{limit})^2 + (S_{man})^2} \\ &= \sqrt{(0.31)^2 + (0.14)^2 + (0.05)^2} \\ &= 0.34mm \end{aligned}$$

This represents an error of 85m on the ground for 1:250 000 data and 34m for 1:100 000 data.

Alternative and equal ways of expressing this error are:

- Not more than 10% of well defined points will be in error by more than 140m for 1:250 000 data and 56m for 1:100 000 data.

The planimetric accuracy of each feature instance (stated as a standard deviation in metres) is given in the Data Quality Table. The standard value for the features will be the standard deviation unless the source of the feature is known to have a different accuracy (higher or lower), in which case the value adopted will reflect the expectation. A value of 9999 is used when the positional accuracy of the feature is not definable or not applicable. For example, the coordinates of a connector feature do not carry any meaning with respect to positional accuracy and so the value of planimetric accuracy given is 9999.

3.6.5 Absolute Elevation Accuracy

The accuracy of the points captured for the Relief layer varies with the source material and the point determination of each particular point. The following table summarises these accuracies.

	Printed Map	Compilation Material	Digital Topographic Data
Spot elevation	± 5 metres	± 5 metres	± 5 metres
Spot elevation inside Depression contour	± 5 metres	± 5 metres	± 5 metres
Spot elevation on Sand ridge	± 5 metres	± 5 metres	± 5 metres
Bench mark			± 1 metre
Horizontal control point			± 15 metres

The accuracy of the contours is defined as 1/2 of the contour interval, for example ± 25 metres for a 50 metre contour interval and ± 10 metres for a 20 metre contour interval.

3.7 Edge Match

Features along the edges of every GEODATA tile will be matched with features along edges of the adjacent tiles for position and attributes (subject to the exceptions listed below), providing that the surrounding tiles are available in digital form on the correct datum.

For the TOPO-250K product, continuous arc and polygon features crossing the GEODATA Tile Edge into the Bleed Edge in the Working Database should be split at the GEODATA Tile Edge. In the resultant GEODATA, the geographical coordinates (latitude & longitude) of the nodes of features split by, and meeting, the Tile Edge will fall exactly on the Tile Edge.

For the TOPO-100K product, continuous arc and polygon features in the Working Database should be split where they cross the GEODATA boundary (which equates to the GDA94 Tile Edge) into the extended area defined by the outer AGD66 Tile Edge. Similarly, in the resultant GEODATA, the geographical coordinates (latitude & longitude) of the nodes of features split by, and meeting, the Tile Edge will fall exactly on the Tile Edge.

The edge may not match where:

- Relevant data on the adjacent tile is not yet available on the correct datum
- A feature which apparently crosses the Tile Edge does not exist on the adjoining tile due to temporal differences in the source material. It should be noted that this form of miss-join should be the exception rather than the rule.
- Special Instructions / Action Requests issued by Geoscience Australia give specific instructions negating the requirement to match feature end points at the Tile Edge.

3.8 Notes on Special Features

3.8.1 Tile Edge

The 'Tile Edge' feature defines the boundary of the area covered by the tile. The Tile Edges will be defined as per Appendix H. TILE AND MAP BOUNDARIES GUIDE. Tile edge features will be used to close off polygons which meet the Tile Edge.

3.8.2 Void Polygons

Polygon features may contain holes or voids which cannot be assigned to any feature class within that layer. For example, a Lake in the Waterbody layer may have in the middle of it an area of dry land. This would appear in the data as a polygon with no paracentroid. A number of GIS packages cannot operate unless all polygons have paracentroids so a paracentroid will be added. These empty areas within polygons are collectively known as voids. Types of voids are listed in the Feature class dictionary, Appendix A.

Voids may abut the Tile Edge where the full extent of the void is on two or more tiles.

3.8.3 Connector Feature

Drainage patterns are made up of both linear (narrow streams) and polygon features (such as lakes and swamps) and as such do not constitute a rigorous linear network. To allow linear analysis of drainage networks to be carried out an artificial feature called a "Connector" has been added to the data.

This Connector feature is used to bridge the gap in linear watercourse features where they are separated by water bodies such as lakes, swamps and watercourses that are depicted as area features. The Connector feature is composed of one or more chains in the general location that would be expected if the polygon feature was collapsed to a line. The points that make up this chain cannot be given any value for planimetric accuracy and this is indicated in the Data Quality attribute for the feature by a value of 9999 (not applicable) for the standard deviation of planimetric accuracy.

The Connector will only be used if there is flow across a waterbody polygon feature. Thus if there is only inflow to a lake and no outflow the Connector feature will not be used.

The use of the Connector feature will cease when a watercourse runs into the sea. In cases where the flow is divided (that is, in river deltas or around river islands), the flow will be represented by only one of the possible paths which will be arbitrarily chosen.

All Connectors contained in waterbodies that flow into other waterbodies will be extended to join the Connector on the recipient waterbody (see diagram at chapter 3.9.1 Differentiation between the Sea (inlets) and Watercourses).

Tributary Watercourses flowing into a polygon waterbody will be linked to the waterbody's Connector for the main watercourse with Connectors (see diagram at chapter 3.9.1 Differentiation between the Sea (inlets) and Watercourses).

The general rule for the attribution of Connectors is that Connectors carry the attributes of the river they represent, that is the classification and perenniality shown in Appendix D. In the application of the rule it must be considered that:

- Connectors running through mangroves are perennial
- Rivers can change their perenniality along their course.

3.8.4 Junction Feature

The Junction is a linear feature which occurs in the framework and waterbody polygon layers. It is an artificial line used to separate adjacent polygon areas across which flow can occur. For example, a Junction feature will separate the confluence of two watercourses where both are depicted as polygons on the source material. A Junction also separates watercourse polygons from the Sea. Junctions will usually be two vertice features. Three vertice junction features are permissible where there is a need to 'shape' the junction or control the relationship with the end node on a connector. Multiple vertice junction features are permissible in the framework layer. Junction features are held in both the Waterbody and Framework layers. The Junction features in the Framework layer are replicated in the Waterbody layer to allow closure of water body polygons.

The Junction feature is arbitrarily placed and cannot be given any value for planimetric accuracy. This is indicated in the Data Quality table by a value of 9999 for the standard deviation of planimetric accuracy.

Junction features will not be placed:

- separating 2 water bodies with identical attributes.
- separating polygons of different feature class except separating watercourse polygons, canal polygons, lakes, reservoirs and the sea from one another.

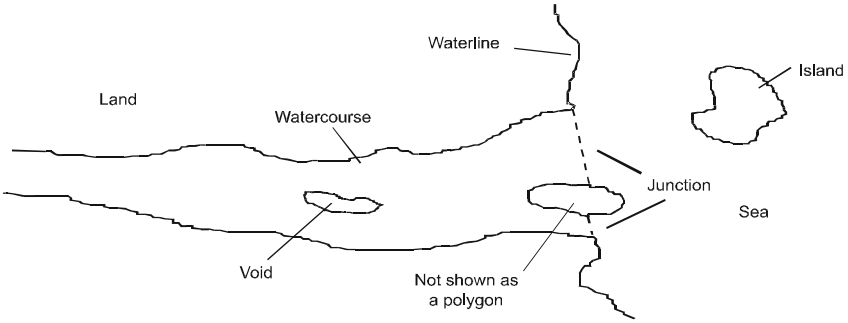
Junction features will be placed:

- separating double line watercourses from other water bodies such as lakes and reservoirs.
- separating waterbody polygons of the same class but with different attributes.
- closing the mouth of rivers (coastline).
- filling the coastal gaps in the framework layer.

3.8.5 Islands

Islands will be represented as polygons coded ‘island’ when they are fully surrounded by sea.

Islands in inland water features will usually be shown as void polygons and islands partly surrounded by sea will not show as polygons. If named, these islands will be represented by a locality with locality code 9 (waterbody island).

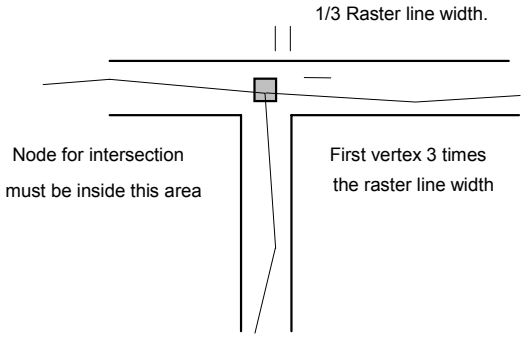


3.8.6 Road and Rail Intersections

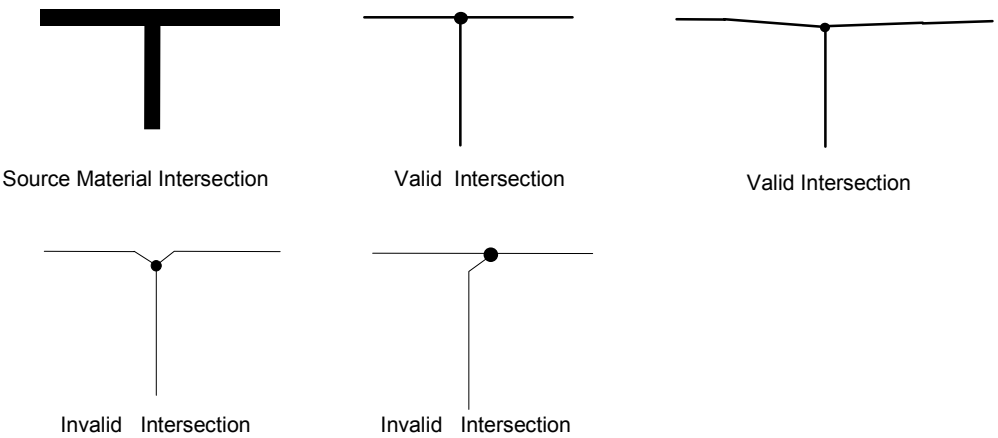
An intersection in digital data will contain the same number of nodes as shown on the source material.

An intersection node will be within 1/6 of the line width of the centre position of the intersection.

The first vertex in each direction from the intersection node will be at a distance greater than three times the line width unless there is a bend in the road before this distance.



Valid and Invalid Intersections



3.8.7 Localities

Localities are point features showing a named place or area. Valid types of localities are shown in Appendix A.

Railway stations will be cloned as localities if the same name is not in use for another Place name, Populated place or Built-up area Locality feature.

Localities with locality code 10 (place name) should be used to define the location of suburbs within large built-up area polygons, see Appendix A.

All localities with locality code 4 (homesteads) will be captured in their true planimetric position.

Localities will coincide with the road network where required, in accordance with the rules prescribed in the 'Locality' entity of Appendix A.

3.8.8 Names

Named features will be attributed with the name in full including the type of feature where it is part of the name. For example 'ESK RIVER', 'ORANGE AERODROME', etc. Usually the type of feature will not be part of the name for railway stations, Locality populated places and Locality place names that identify centres of population. Abbreviations must not be used. Names will be in upper case.

In the naming of localities, the terms 'Mission' and 'Aboriginal Community' should be avoided. Source material for the names of Indigenous communities will be determined by Geoscience Australia.

Plural names associated with a group of features should be assigned to every feature in the group unless the individual features have a name in their own right.

Unnamed features on the edge of the working tile could have a name in the adjacent tile. In these cases the names on the adjacent tile will be used.

In the case of conflicting names for a feature or for features matching across an edge, the incompatibility should be resolved and the features named accordingly. The National Gazetteer of Australia will be used to resolve incompatibilities.

Unnamed river anabranches will carry the river's name. Where a river anabranch is named in its own right it will carry its name (eg. EDWARD RIVER).

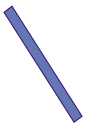
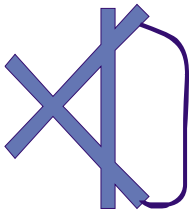
3.8.9 Parks and Waterbodies

Waterbodies will be considered part of parks when they are fully included in the park (see feature class Park in Appendix A). That is, they will not be shown as voids in the parks. In all cases the water bodies will appear as such in the Waterbodies layer.

Note: care should be taken to avoid confusing Park and Reserve - Nature Conservation feature classes (see Appendix A).

3.8.10 Aircraft Facilities

The following examples illustrate how aircraft facilities are depicted as point, arcs and polygons at both 1:100 000 and 1:250 000 scales:

250K Data	250K Map	100K Data	100K Map
Aircraft Facility: Helipad Cover: A Type: Point Feat_code: aircrft_flty Facility: 3		Cover: A Type: Point Feat_code:aircrft_flty Facility: 3	
Aircraft Facility: Landing Ground Cover: 5 Type: Arc Feat_code: runway_c_l Symbol:0 Length: >457m Cover: A Type: Point Feat_code:aircrft_flty Facility: 2		Cover: Z Type: Arc Feat_code: aircrft_f_l Symbol: 702 Cover: Z Type: Polygon Feat_code:aircrft_f_a Facility: 2	
Aircraft Facility: Airport Cover: 5 Type: Arc Feat_code: runway_c_l Cover: A Type: Point Feat_code:aircrft_flty Facility: 3		Cover: Z Type: Arc Feat_code:airc_f_void Cover: Z Type: Arc Feat_code: aircrft_f_l Symbol: 702 Cover: Z Type: Polygon Feat_code:aircrft_f_a Facility: 3 Cover: A Type: Arc Feat_code: Taxiway	
Airport N/A	N/A	Cover: Z Type: Arc Feat_code: aircrft_f_l Symbol: 0 Cover: Z Type: Polygon Feat_code: airport Symbol: 0	N/A

3.8.11 Sea Walls

Sea walls will be shown when they are coincident with the coastline ie. when the wall is wet under normal daily tidal action. Retaining walls adjacent to beaches or in riverbanks do not fall in this feature class.

3.9 Depiction of the Coastal Environment

The Framework, Waterbody and Offshore layers contain features which depict the coastal environment. The area of tidal influence is part of the Sea feature unless it is closed off by a Junction feature.

The line separating the sea and the land (waterline) will be the position of mean high water level. The exception is in mangroves, where the waterline will run on the seaward side.

To preserve the name of a watercourse for its entire length, a Junction will be used to close off tidal portions of named watercourse polygons, where the watercourse flows into an inlet or bay considered part of the watercourse (see chapter 3.9.1 Differentiation between the Sea (inlets) and Watercourses). The polygon formed by closing off inlets will be a Watercourse feature.

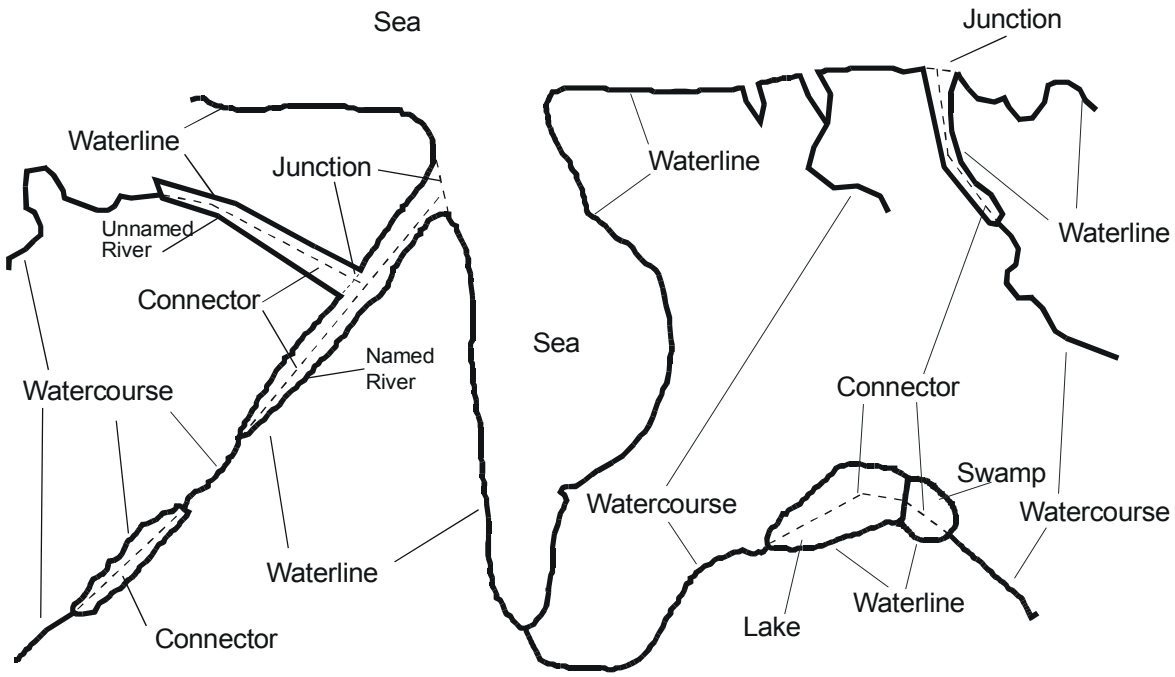
The use of the connector feature will cease when a watercourse runs into the sea.

The diagram below illustrates how features are used in GEODATA to represent the riverine and maritime environments. See also Section 3 chapter 6.9.3.

3.9.1 Differentiation between the Sea (inlets) and Watercourses

The interpretation of features as watercourses or inlets should be done by applying the following criteria:

- when the area in question is named as part of the sea (inlet, bay, etc.) it should be considered as such.
- when the polygon feature is named as a river it should be considered as a watercourse.
- when the area in question has no name and there is no linear stream flowing into it, it should be considered as part of the sea.
- when the polygon feature is unnamed, has a single line stream flowing into it and is longer than 4 mm at map scale, it should be considered as a watercourse.
- when the polygon feature is unnamed, has a single line stream flowing into it and is shorter than 4 mm at map scale, it should be considered as part of the sea.



The coastline is represented by chains coded as waterline. These chains are indicative of the mean high water mark except in areas covered by mangroves, where the limit between the sea and the land is considered to be the seaward side of the mangroves.

In the places where walls have been erected to prevent the erosion of the land by the sea, sea walls will replace the waterlines.

4. Quality Information

Quality information allows the users of the data to make informed decisions about the fitness of the data for their application.

Quality information will be provided in three ways:

1. Product quality information
2. Tile quality information
3. Feature quality information

4.1 Product Quality Information

The Product Quality Information will provide data which is specific to the whole product. The Product Quality Information will be stored in the Product Quality Statement. There will be one Product Quality Statement for TOPO–250K, named “topo250k.dqs” and one for TOPO-100K named “topo100k.dqs”. This consists of a history of the source material, a description of the digitising methods and quality aspects that are common to the whole of the topographic vector product such as positional accuracy, attribute accuracy, logical consistency and completeness.

Geoscience Australia will provide the product quality information.

4.2 Tile Quality Information

The Tile Quality Information will provide information which is specific to the tile covered by the data file. The Tile Quality Information will be stored in two types of tables: layer quality tables and layer frequency tables. Each layer of a tile will have associated with it one layer quality table and one layer frequency table. The layer quality table, named <layer name>.tqi, will store primarily name, date, and datum information about the layer. The layer frequency table, named <layer name>.frq, will store frequency counts of each feature type, based on feature code, in that layer.

An example of the content and structure of a layer quality table and a layer frequency table is given in Appendix I.

The layer quality table has the following fields:

the tile name (TILE_NAME) [character; 50, 50 C]

the tile code (TILE_CODE) [character; 10,10,C]

the theme of which the layer is part (THEME) [character; 20, 20, C]

the technical specification to which the data conforms (TECH_SPEC) [character; 20, 20 C]
This specification is coded as GTVPTS followed by the specification's version number.

the date the data passed Geoscience Australia's quality control (QC_PASSED) [date; 8, 10, D]

the software used to convert the data into vector format (FMT_CONV_SW) [character; 30, 30, C]
A standard description will be established for each conversion software used.

the date the data was converted into vector format (FMT_CONV_DT) [date; 8, 10, D]

the datum on which the data is based (DATUM) [character; 30, 30, C]

Field specifications are in the format **field descriptor (field name), [data type; input width, output width, field type code (c = character, d = date, i = integer, b = binary)]**

For initial capture of Series 1 TOPO-100K, the FMT_CON_SW and FMT_CONV_DT fields will be populated in bulk for each work unit with the software used to convert newly scanned layers (FMT_CON_SW) and the date that the conversion was carried out (FMT_CONV_DT).

Staff in Geoscience Australia's Validation and Testing cell will populate the "QC_PASSED" field of the layer quality table. The table will be submitted to the Validation and Testing cell with all other data included.

The layer frequency table has the following fields:

the feature code (FEAT_CODE) [character; 12, 12, C]

the frequency of occurrence of that feature code in the respective layer (FREQUENCY) [binary; 4, 5, B]

Field specifications are in the format **field descriptor (field name), [data type; input width, output width, field type code (c = character, d = date, i= integer, b = binary)]**

4.3 Feature Quality Information

The feature quality information provides feature specific quality information. The feature quality information will be stored in a Data Quality Table. There will be one Data Quality Table per tile, called <TILE CODE (without the preceding "S" at 250K)>DQT. As set out in chapter 3.5 every feature instance will have associated with it a data quality attribute *(q_info)* which will be the link to a record in the Data Quality Table. This table contains data quality information which is relevant to the specific feature instance. Data held in this indirect table consists of the following information about the feature instance:

- the reliability date of the spatial object
- the reliability date of the attribute object
- an estimate of the standard deviation of the horizontal positional accuracy
- an estimate of the standard deviation of the vertical positional accuracy
- the source agency of the feature.

The data quality table has the following fields:

- data quality pointer (Q_INFO) [character; 8, 8, C]
- reliability date of the spatial object (FEAT_REL) [date; 8, 10, D]
- the reliability date of the attribute object (ATT_REL) [date; 8, 10, D]
- the standard deviation of the horizontal positional accuracy (PLAN_ACC) [integer; 4, 4, I]
- the standard deviation of the vertical positional accuracy (ELEV_ACC) [integer; 4, 4, I]
- the name of the agency that performed the original capture (SOURCE) [character; 50, 50 C]

Field specifications are in the format **field descriptor (field name), [data type; input width, output width, field type code (c = character, d = date, i= integer, b = binary)]**

The reliability date of the spatial object **(feat_rel)** is the date of the latest source material where the position of a particular feature was verified.

The reliability date of the attribute object **(att_rel)** is the date of the latest material used to verify at least one attribute value for a feature.

For **first production of a 1:100 000 (TOPO-100K) Series 1 tile**, the Feature (feat_rel) and Attribute reliability (att_rel) dates will be populated as shown in the following 1:100 000 Scale Data Quality Table, and the 'tile completion date' will be the date production work was completed for the tile prior to its first submission to VAT.

For **revision of a 1:250 000 (TOPO-250K) Series 2 tile**, the Feature and Attribute Reliability dates (feat_rel and att_rel) for Q_INFOs with <tile-id>1,2,6 and 9 will be updated with the date of the earliest imagery used for the revision, in accordance with the following 1:250 000 Scale Data Quality Table. The Feature (feat_rel) and Attribute (att_rel) reliability dates already populated for Q_INFOs with <tile-id>3, 4, 5, 7, 8 and 10 will remain unchanged.

The estimate of the standard deviation of the horizontal positional accuracy (plan_acc) will be assigned according to the source material used to capture the feature and the conversion methodology.

Default values for the different feature classes' horizontal positional accuracy are detailed in the feature class dictionary in Appendix A.

The estimate of the standard deviation of the vertical positional accuracy (elev_acc) will be assigned according to the source material used to capture the feature and the conversion methodology. Default values for the different feature classes are detailed in chapter 3.6.5 Absolute Elevation Accuracy.

The source agency (source) will be the official name of the agency that performed the original capture of the spatial object, truncated if it is more than 50 characters long. Where contractors capture data on behalf of Geoscience Australia, the source agency will be GEOSCIENCE AUSTRALIA.

The rules used to code the Data Quality Pointer are set out in chapter 3.5 Data Quality Pointer Attribute.

1:100 000 SCALE DATA QUALITY TABLE

Q_INFO	FEAT_REL	ATT_REL	PLAN_ACC	ELEV_ACC	SOURCE
<tile-id>1	date of earliest imagery	date of earliest imagery	100	9999	
<tile-id>2	date of earliest imagery	date of earliest imagery	9999	9999	
<tile-id>3	tile completion date	tile completion date	100	25	
<tile-id>4	Earliest reliability date of base material / digital data	Earliest reliability date of base material / digital data	100	9999	
<tile-id>5	Earliest reliability date of base material / digital data	Earliest reliability date of base material / digital data	9999	9999	
<tile-id>6	date of earliest imagery	date of earliest imagery	10	15	
<tile-id>7	tile completion date	tile completion date	100	5	
<tile-id>8	tile completion date	tile completion date	9999	25	
<tile-id>9	date of earliest imagery	date of earliest imagery	1	9999	
<tile-id>10	tile completion date	tile completion date	100	1	

1:250 000 SCALE DATA QUALITY TABLE

Q_INFO	FEAT_REL	ATT_REL	PLAN_ACC	ELEV_ACC	SOURCE
<tile-id>1	date of earliest imagery	date of earliest imagery	100	9999	
<tile-id>2	date of earliest imagery	date of earliest imagery	9999	9999	
<tile-id>3	existing (populated) date	existing (populated) date	100	25	
<tile-id>4	existing (populated) date	existing (populated) date	100	9999	
<tile-id>5	existing (populated) date	existing (populated) date	9999	9999	
<tile-id>6	date of earliest imagery	date of earliest imagery	10	15	
<tile-id>7	existing (populated) date	existing (populated) date	100	5	
<tile-id>8	existing (populated) date	existing (populated) date	9999	25	
<tile-id>9	date of earliest imagery	date of earliest imagery	1	9999	
<tile-id>10	existing (populated) date	existing (populated) date	100	1	

5. Data Arrangement

The GEODATA Topographic Vector Products form part of a national, digital, spatial data environment for use by all users of digital spatial data. The features included in this product are arranged in themes and layers as follows.

All features include an attribute for feature code (feat_code) and q_info, and at 1:250 000 a UFI value. For more information on feature classes and associated attributes see Appendix A.

5.1 Framework Layer (All Themes)

Layer	Layer Type	Feature Class	Attributes	Spatial Object
Framework	Polygon	Island	Name, State/Territory	Polygon
		Junction		Chain
		Mainland	State/Territory	Polygon
		Sea	Name	Polygon
		Sea Wall		Chain
		State Border		Chain
		Tile Edge		Chain
		Waterline		Chain

5.2 Vegetation Theme

Layer	Layer Type	Feature Class	Attributes	Spatial Object
Vegetation	Polygon	Woody Vegetation	Cover Density (100K), Growth Form (100K)	Polygon
		Mangrove		Polygon
		Orchard or Vineyard	Planting Type (100K)	Polygon
		Plantation	Planting Type (100K)	Polygon
		Rainforest		Polygon
		Tile Edge		Chain
		Vegetation Line		Chain
		Vegetation Void		Polygon
Vegetation Miscellaneous	Linear	Windbreak		Chain

5.3 Infrastructure Theme

Layer	Layer Type	Feature Class	Attributes	Spatial Object
Aeronautical Point	Point (250K)	Aircraft Facility	Name, Aircraft Facility Type	Point
Aeronautical Line	Chain (100K)	Taxiway		Chain
Aeronautical Area	Polygon (100K)	Aircraft Facility	Name, Aircraft Facility Type	Polygon
		Aircraft Facility Line		Chain
		Aircraft Facility Void		Polygon
		Airport		Polygon
		Tile edge		Chain
Built-up Areas	Polygon	Built-up Area	Name	Polygon
		Built-up Area Line		Chain
		Built-up Area Void		Polygon
		Cemetery	Name	Polygon
		Park	Name, Park Code	Polygon
		Rubbish Tip (100K)		Polygon
		Tile edge		Chain

Layer	Layer Type	Feature Class	Attributes	Spatial Object
Localities	Point	Locality	Name, Locality Code	Point
Buildings Point	Point	Building	Building Code, Building Function (100K)	Point
Cultural Area	Polygon (100K)	Building Landmark Area Cultural Area Line Tile edge	Building Code, Building Function Name, Description	Polygon Polygon Chain Chain
Rail Transport	Point / Linear	Railway Railway Bridge Railway Causeway Railway Station Railway Tunnel Railway Overpass	Name, Tracks, Status, Gauge Name, Tracks, Status, Gauge Name, Tracks, Status, Gauge Name Name, Tracks, Status, Gauge Name, Tracks, Status, Gauge	Chain Chain/Point Chain Point Chain/Point Chain
Road Transport	Point / Linear	Ferry Route Foot Bridge (100k) Foot Track Ford Gate Road Road Bridge Road Causeway Road On Dam Road Tunnel Road Overpass Stock Grid	Name Name Name Name, Classification, Formation, National Route Number, State Route Number Name, Classification, Formation, National Route Number, State Route Number Name, Classification, Formation, National Route Number, State Route Number Name, Classification, Formation, National Route Number, State Route Number Name, Classification, Formation, National Route Number, State Route Number Name, Classification, Formation, National Route Number, State Route Number Name, Classification, Formation, National Route Number, State Route Number Name, Classification, Formation, National Route Number, State Route Number	Chain Chain Chain Chain/Point Point Chain Chain/Point Chain Chain Chain/Point Chain Point
Utilities	Point / Linear	Aerial Cableway Conveyor Dam Dry dock Fence Gas Well Landmark Point Mine Storage Tank Yard	Name Name Name Description Name 	Chain Chain Chain Point Chain Point Point Point Point Point
Seismic Lines	Linear	Seismic line/Cleared line		Chain
Powerlines	Linear	Powerline		Chain
Pipelines	Linear	Pipeline	Product Code, Relationship	Chain

5.4 Hydrography Theme

Layer	Layer Type	Feature Class	Attributes	Spatial Object
Drainage	Point / Linear	Canal Connector Lock Rapid Spillway Watercourse Waterfall Waterhole	Name Name, Perenniality, Hierarchy Name Name, Perenniality, Hierarchy Name, Perenniality, Hierarchy Name, Perenniality, Hierarchy Name Name, Perenniality	Chain Chain Point Chain Chain Chain Point Point

Layer	Layer Type	Feature Class	Attributes	Spatial Object
Waterbodies	Polygon	Canal	Name	Polygon
		Junction		Chain
		Lake	Name, Perenniality	Polygon
		Land Subject to Inundation	Name	Polygon
		Mangrove Flat		Polygon
		Marine Swamp		Polygon
		Rapid	Name, Perenniality, Hierarchy	Polygon
		Rapid Area Line		Chain
		Reservoir	Name	Polygon
		Saline Coastal Flat		Polygon
		Salt Evaporator		Polygon
		Settling Ponds		Polygon
		Swamp	Name	Polygon
		Tile edge		Chain
		Waterbody Void		Polygon
		Watercourse	Name, Perenniality, Hierarchy	Polygon
		Waterline		Chain
Offshore	Polygon	Foreshore Flat		Polygon
		Offshore Line		Chain
		Offshore Void		Polygon
		Reef	Name, Relationship, Reef	Polygon
		Tile edge		Chain
Navigation	Point	Lighthouse	Name	Point
		Offshore Rock	Name, Relationship	Point
		Wreck	Name, Relationship	Point
Waterpoint	Point	Bore	Name (100K)	Point
		Spring	Name (100K)	Point
		Water Tank	Name (100K)	Point
		Waterpoint	Name (100K), Waterpoint Code	Point
		Windpump	Name (100K)	Point
Marine Facilities	Linear	Boat Ramp (100K)		Chain
		Breakwater		Chain
		Jetty		Chain
		Wharf		Chain

5.5 Relief Theme

Layer	Layer Type	Feature Class	Attributes	Spatial Object
Spot Heights	Point	Spot Elevation	Elevation, Source, Point Determination	Point
Survey Marks	Point	Bench Mark	Elevation, Code	Point
		Horizontal Control Point	Elevation, Code	Point
Sand Ridges	Linear	Sand Ridge	Average Height	Chain
Relief Area	Polygon	Crater		Polygon
		Distorted Surface		Polygon
		Open Cut/Mining area		Polygon
		Relief Area Line		Chain
		Relief Area Void		Polygon
		Rocky Outcrops		Polygon
		Sand		Polygon
		Sand Dunes		Polygon
		Tile edge		Chain
Contours	Polygon	Contour	Elevation, Contour Code	Chain
		Hypsometric Area	Elevation	Polygon
		Tile edge		Chain
Auxiliary Contours	Chain (100K)	Auxiliary Contour	Elevation, Contour Code	Chain

Layer	Layer Type	Feature Class	Attributes	Spatial Object
Morphology	Point / Linear	Cave Cliff Cutting Embankment Levee Razorback Pinnacle		Point Chain Chain Chain Chain Chain Point

5.6 Reserved Areas Theme

Layer	Layer Type	Feature Class	Attributes	Spatial Object
Security Areas	Polygon	Prohibited Area Prohibited Area Line Prohibited Area void Tile edge	Name, Authority Code	Polygon Chain Polygon Chain
Reserved Areas	Polygon	Reserve - Indigenous Area Reserve - Forestry Reserve - Nature Conservation Reserve - Water Supply Reserve Line Reserve Void Tile edge	Name, Authority Code Name, Authority Code Name, Authority Code Name, Authority Code	Polygon Polygon Polygon Polygon Chain Polygon Chain

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1. Scope of this Document

This document, the NTMS Specification, provides the rules and guidelines for the generation of the Geoscience

Australia 1:100 000 and 1:250 000 Topographic Map Series maps products. It includes the relevant standards expected for map accuracy, datum control, map generalisation principles, map symbology and masking rules, type selection and placement rules, type (font & size) specification and standard type abbreviations.

Conformance to these specifications will assure uniformity through all mapping elements and agencies engaged in the production and maintenance programs for these series.

2. Introduction

2.1 Use of Maps

The topographic map is a graphic representation of a portion of the earth's surface generalised to allow significant detail to be shown with clarity and without ambiguity. Detail is systematically plotted to scale on a selected map projection to present the horizontal and vertical position of topographic features in an identifiable and measurable form.

2.2 Map Accuracy

The term 'map accuracy' refers to the positional and vertical accuracy of information contained within the map. The term may also describe the quality and completeness of the information shown on a map. To the map user, the quality and completeness of the information is of prime importance and may take precedence over absolute positional accuracy. Thus the map maker must exercise maximum care in ensuring that the detail plotted is complete, correctly classified and portrayed with shape fidelity. Generalisation, although necessary in derived products, must be kept to a minimum.

2.2.1 Positional Accuracy

The positional accuracy of features on a map is an estimate of the degree to which the coordinates of that feature agree with the true values or values accepted as being true. The error in the position of a feature results from :

- The errors inherent in the reference data used in the map production process;
- The errors in the digitising process used to capture the data during the map production process; and
- The errors inherent in the process of generalisation that forms part of the map production process.

The measure of accuracy given for topographic maps is the standard deviation.

Well-Defined Points:

Well-defined points can be accurately identified on the map. Most commonly the well-defined points used in tests are at feature intersections. Geoscience Australia has carried out both error analysis and field tests to verify the positional accuracy of features on the existing mapping.

NTMS maps will comply with the following statement of planimetric accuracy:

At 1:250 000 scale, the summation of errors from all sources results in map detail with a standard deviation of 85 metres for well-defined features.

An alternative and equal way of expressing this error is:

- Not more than 10% of well-defined features are in error by more than 140 metres

At 1:100 000 scale, the summation of errors from all sources results in map detail with a standard deviation of 34 metres for well-defined features.

An alternative and equal way of expressing this error is:

- Not more than 10% of well-defined features are in error by more than 56 metres

2.2.2 Vertical Accuracy

The National Mapping Council of Australia *Standards of Map Accuracy* (2nd edition, 1975) stated in general terms that, **90% of tested contours and elevations interpolated from contours will be accurate to within one half a contour interval of their true height**. A definitive statement on map accuracy, both horizontal and vertical, is included in the marginal information of all maps.

2.2.3 Impact of Generalisation

Some features are subject to cartographic generalisation. Features may be located on the earth's surface in such a way that they cannot be separated at the scale of the map. To ensure cartographic clarity, one feature is held in the correct position and the rest are displaced. At the time of compilation a hierarchy determines which features are held in the correct position. The following features may be displaced when one or more are adjacent. The higher a feature is on the list, the more likely that it has been held in the correct position over those lower on the list. Natural features will be given precedence over constructed features. Features not on the list may be displaced unless otherwise stated in Appendix A, Feature Class Dictionary. In such circumstances the position of features on the list will be maintained over the position of features not listed. If two features need to be offset to one another and neither is listed, the position of the feature with greater landmark value will be maintained.

- Hydrographic lines such as coastlines, watercourses and lakes
- Railways
- Principal roads
- Secondary roads
- Minor roads
- Vehicular tracks
- Buildings
- Vegetation boundaries

For example, if a railway and road were coincident at the scale being produced, the road would be displaced. Where two or three features are close and adjacent, one may be displaced by up to 225 metres at 1:250 000 scale and 90 metres at 1:100 000 scale. In the worst case when all these features are close and adjacent, one may be displaced by up to 675 metres at 1:250 000 scale and 270 metres at 1:100 000 scale.

Such displacement must maintain the correct alignment and spatial relationship of one feature to the other. Point features such as buildings in close proximity to linear features should be displaced in such a way that they retain, as far as possible, their positional relationship relative to other features. Where displacement of buildings will result in unnecessary clutter they may be deleted from the map. After displacement, these symbolised features will not remain within accuracy tolerances and therefore cannot be included in accuracy tests.

For example, at the scale of 1:100 000 and using the prescribed symbolisation (0.5mm x 0.5mm), the typical Australian house would cover an area on the ground equivalent to 50m x 50m, and the symbol for a single-track railway would occupy a width equivalent to 250 metres. The portrayal of many other features requires similar exaggeration.

2.3 Use of Map Symbols

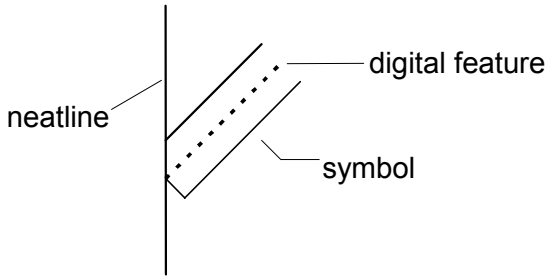
Symbols and colours to be used are set out in Appendix A; Symbol dictionary.

2.3.1 Positioning of Symbols

Normally the centre of a symbol will correspond with the position of the centre of the feature on the ground and unless otherwise specified, the orientation of the symbol will correspond with the orientation of the feature on the ground.

When, for the sake of clarity, it is necessary to displace a symbol, the amount of displacement will be kept to a minimum. In situations where it is not possible to correctly position all the symbols for a group of features, only the symbol for the most important feature will be shown.

The symbology for linear features will not extend beyond the map neatline. Symbology for features that meet the neatline will be truncated at right angles to the feature within the neatline. Treatment of the symbology for linear features meeting the tile edge is shown below.



2.4 Map Projection and Grid

The maps are published on the Universal Transverse Mercator projection. The projection, spheroid and grid zones are as specified for the Geocentric Datum of Australia 1994 (GDA94). A brief description is available in Appendix M and additional information on GDA94 is available on the World Wide Web at:

http://www.ga.gov.au/nmd/geodesy/datums/gda.jsp

2.5 Map Extents

Generally, each standard 1:100 000 map will cover a half degree of latitude by a half degree of longitude. An extension to the North and the East is included to compensate for the transition from the AGD66 to the GDA94 Datum. Extensions have been made to include large cities into one map and also to minimise the areas of sea contained on a map.

At 1:250 000 scale each standard map will cover a one degree of latitude by one and a half degrees of longitude. The maps will also have a ‘bleed edge’ of approximately three minutes to the north and around 5 minutes to the east. Extensions have been made to include large cities into one map and also to minimise the area of sea contained on a map.

For a detailed list of non-standard map areas, sheet extents and paper sizes refer to Appendix H.

2.6 Map Sheet Numbers and Names

The map indexes will be included in Appendix G.

2.7 Datum for Map Control

Horizontal control coordinates are based on the Geocentric Datum of Australia - 1994 (GDA94).

Vertical control values are based on the Australian Height Datum 1971, which is based on mean sea level 1966-1968.

2.8 Contour Interval

Generally, the standard contour interval for 1:100 000 scale maps is 20 metres. Occasionally omission of contours from the map (but not the data) will be necessary due to the nature of the terrain; variations to the standard interval will be advised on the map.

1:250 000 scale maps generally have a contour interval of 50 metres. Where omission of contours from the map (but not the data) is necessary due to the nature of the terrain in certain areas, variations to the standard interval will be advised on the map.

2.9 Masking

This chapter provides rules so that masking of features is applied uniformly to reproduction material. These rules come into force where overprinting between symbols of different colour is undesirable and clashes between features are unavoidable, see chapter 2.2.3 Impact of Generalisation and chapter 5 Type Selection and Placement. These rules do not affect features in the Working Database but will be applied in the processes that produce the reproduction material.

Specific instructions have been included in Appendix A, Feature class dictionary and these will take precedence over these guidelines. Care should be taken in reading Appendix A to differentiate between:

- Map rules which require masking (features to be broken) on the repromat but do not affect the features in the working database;
- Map rules or general rules which require a feature to be symbolised to 0 in certain circumstances; and
- Data rules or general rules that control the presence of a feature in the working database.

General rules for masking are:

- Unless covered by another general rule or a specific rule in Appendix A, Feature class dictionary, all symbols will overprint one another.
- Unless otherwise stated features will be masked with no gaps around the feature which is maintained.
- Solid black point, linear and area symbols and solid black pattern screens will be masked out for black type with a 0.2 mm gap around the type. Screened black features will not be masked for type.
- Area features will be masked out for Prohibited Area line verges.
- All other features will be masked for Route Marker – National, and Route Marker – State symbols and for Locality code 10 symbols.

3. Information to be included

3.1 Information Internal to the Map

Those features specified in Appendix A - Data Dictionary will be included on the map. The Feature Class Dictionary establishes criteria for inclusion of features. In complex areas care should be taken when adding new features to avoid clutter and ambiguity on the map.

3.1.1 Grid

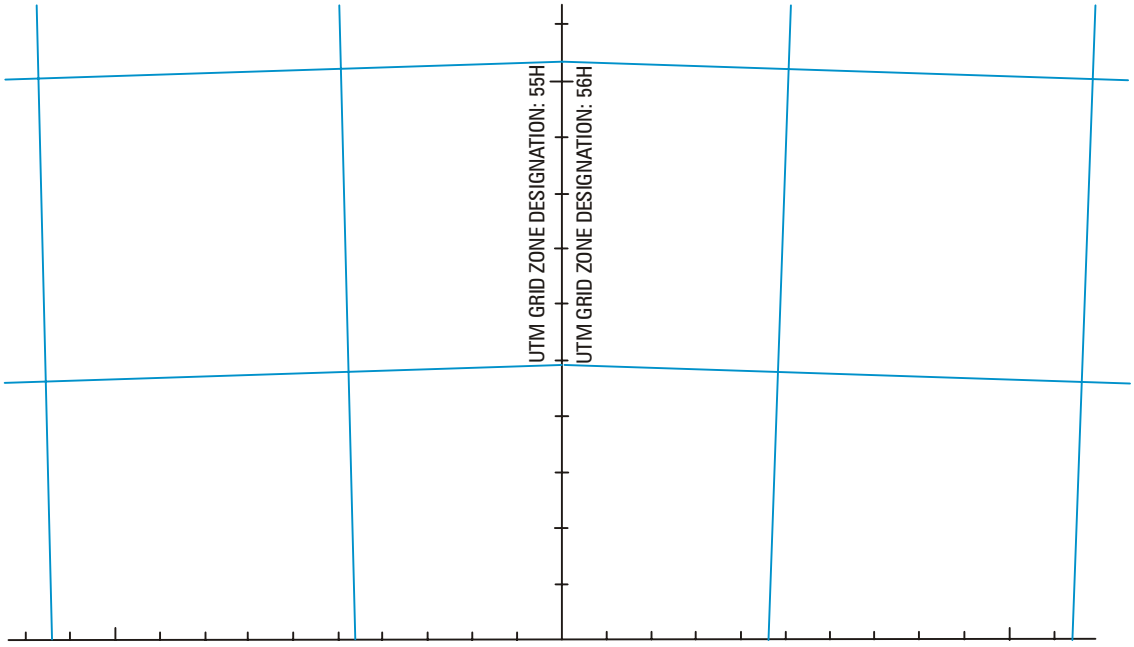
For 1:250 000 scale maps, grid lines at ten thousand metre intervals of the Map Grid of Australia (MGA94) will be shown as specified on the relevant 1:250 000 NATMAP Series Format Sheet, Appendix B.

For 1:100 000 scale maps, grid lines at one thousand metre intervals of the MGA94 will be shown as specified on the 1:100 000 NATMAP Series Format Sheet, Appendix B.

Where the eastern bleed edge crosses the grid zone boundary or the sheet is extended to the east across a zone boundary, all data will be plotted on the primary zone. However, in the bleed or extended area the appropriate grid for the adjacent zone, properly georeferenced will be plotted rather than the primary grid. For example, the Bega or Dubbo 1:250 000 would be plotted on Zone 55 with the Zone 56 grid in the correct orientation plotted for the area east of 150 degrees east.

Where a map overlaps two or more zones the zones will be labelled at the boundary. The label will be in black UMC 7 point type all in caps. The label will be offset 2.5 mm from the graticule line where the zone change occurs.

Example (1: 250 000 only)



The ‘UTM Grid Zone Designation’ note will not be included on 1:100 000 scale maps.

3.1.2 Graticule

For 1:250 000 scale maps, graticule lines at one minute intervals will be shown as specified on the relevant 1:250 000 NATMAP Series Format Sheet, Appendix B.

For 1:100 000 scale maps, graticule lines at one minute intervals will be shown as specified on the 1:100 000 NATMAP Series Format Sheet, Appendix B.

3.2 Map Surround Information

Information to be shown will conform to the format sheets at Appendix B.

4. Feature Names

Inclusion of names on the map does not imply approval by the relevant Geographic Names Board. However, an authoritative source should be used. Names appearing on the latest previous edition map at the same scale will be shown unless the named feature no longer exists. Additional names may be included from source material supplied, larger scale topographic mapping or from the controlling authority.

4.1 Type

Type styles and sizes to be used inside the neatline are specified in chapter 8 (1:250 000 Scale Type Specifications) and chapter 9 (1:100 000 Scale Type Specifications).

Specifications for type styles, sizes and placement of grid and marginal information are contained in the appropriate format sheets in Appendix B (for both 1:250 000 and 1:100 000 scale).

5. Type Selection and Placement

Names and descriptive notes are integral components of a map, which are essential aids to the identification and qualification of features depicted on the map. They also provide information that cannot be shown by mapping symbolisation.

The final map should not be cluttered or ambiguous in content. Names and descriptive notes should be in a size and style relevant to the prominence and/or of the relative importance of the depicted features.

5.1 General

The proper selection and placement of type is of extreme importance and will not only benefit the map user but also the final appearance of the map. Poor or careless labelling of features can cause complications in map reading and negate the cartographic quality of the map.

Only standard abbreviations listed in Chapter 10 Authorised Abbreviations, will appear on the map.

Type selection and placement is governed by the nature, size and relative importance of the feature to be identified.

The examples provided illustrate preferred and less desirable approaches to map labelling, and in the interests of clarity, reflect optimum conditions. However, it must be realised that what is deemed incorrect or less desirable may be the only alternative under abnormal conditions.

Preferred positioning of type, as outlined in these specifications, is established to ensure a standard treatment of definitive labelling.

5.2 Selection of Names and Descriptive Notes

The selection of names and descriptive notes will be based on the source material supplied by Geoscience Australia.

Names used on the latest previous edition map should be maintained unless there is strong evidence that they are incorrect or that the named feature no longer exists.

When considering the selection of names to be included on the map, every effort should be made to ensure that they are compatible with the particular map area, scale and use.

Factors that must be considered are:

(1) Date and reliability of the data,
(2) Density of names and detail,
(3) Legibility of the final product,
(4) Name placement relative to the depicted feature,
(5) The relative prominence and/or importance of topographical features within the area,
(6) The amount of descriptive notes necessary for clear portrayal, and,
(7) Consistency with adjoining maps.

Common failings in the selection of names and descriptive notes include:

(1) Undue emphasis being given to minor features,
(2) Lack of consistency between similar features,
(3) Clutter,
(4) Ambiguous type placement, and,
(5) Inconsistency between adjoining maps.

5.3 Principles of Type Placement

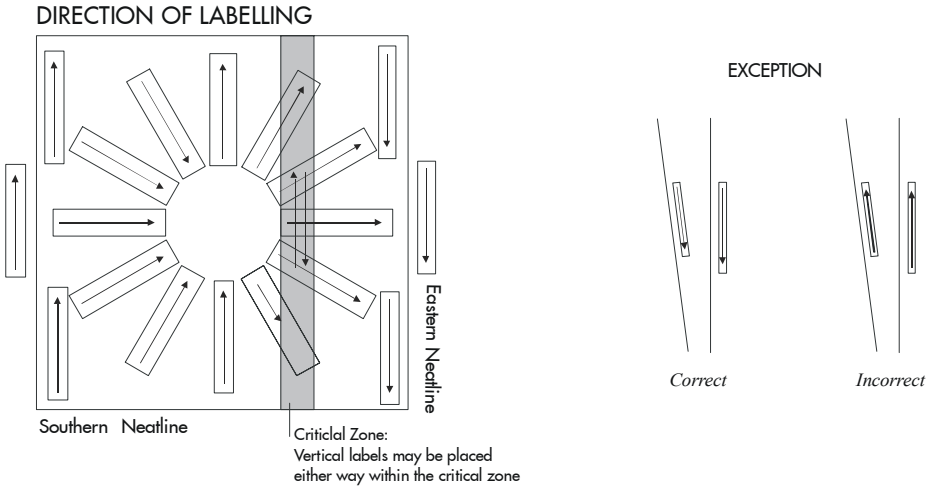
This chapter establishes the basic rules for type placement. These rules are subject to exceptions. Frequently more than one rule may apply to a particular situation and these rules may be in conflict with one another. In these situations the overriding factors in assessing which rule(s) takes precedence are determined from a standpoint of graphic legibility and order of importance. The rules are given in their order of importance.

1. Internal type is positioned to assure immediate and unmistakable identification of the features being labelled. Where possible, labelling is placed in areas of sparse symbolisation to avoid obscuring important land formations and other detail.
2. For most features labelling should be placed in a straight line. Where a feature constitutes a simple curve, the associated type should be broken into its individual word components and each component positioned parallel to the part of the feature to which it is adjacent. When labelling complex curves (eg. rivers, ranges) the individual components are to be positioned so that they are parallel to the generalised shape of the feature. In both cases the components should appear to flow into one another and not have a disjointed appearance.

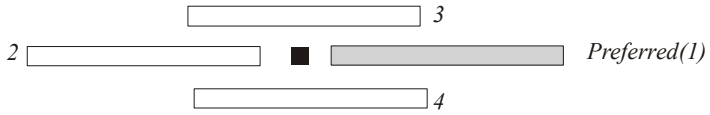
3. The maximum spacing between successive words of a feature name will be approximately one and a half (1½) times the length of the unspaced feature name. In many instances it will be practical to exceed the 1½ times rule providing word continuity is kept. Where practicable the word spacing should be the same for all words in a name.

4. Type positioned parallel to the easting grid line is aligned to read to its best advantage when viewed from the south neatline. The one exception to this rule occurs when adjacent features are nearly parallel and only one diverges from the perpendicular. In such cases, the direction of labelling is not reversed for the perpendicular feature.

Examples:

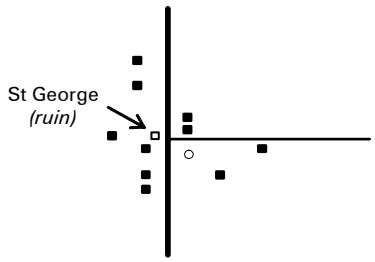


5. When labelling individual symbols or small concentrated groups of symbols comprising a single feature, the type is to be placed adjacent to the symbol or symbols and aligned parallel to the northing grid lines. Where a map crosses a zone boundary, type will be aligned parallel to the northing grid lines for the grid covering the majority of the map. Preferred and acceptable alternate positioning of type is illustrated in the following diagram. Numbers indicate priority order for the type position.



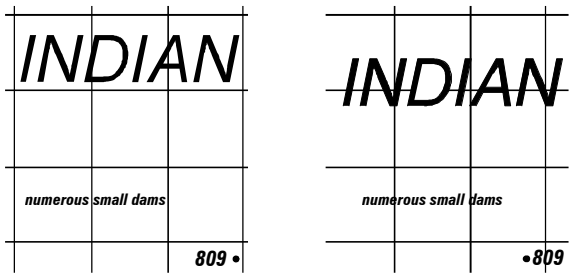
6. Instances will occur due to density of detail where type must be placed a distance from the feature to be identified. In these instances a feature pointer extending from the type to the feature is required. However, this practice is kept to a minimum.

Example:



7. An integral part of any map is the grid and/or graticule. As such it is preferable that type be positioned in such a manner as to avoid overprinting grid/graticule lines (particularly the northing grid lines) or numbers. Obviously this will be impossible in some cases (eg. ocean names, areas of dense detail etc.). In these cases it is preferable that type does not overprint grid/graticule intersections, as these are important measurement points when calculating grid references. When labelling spot features it is preferable that both the symbol and the relating type fall within the confines of the same grid square. Where this is not possible due to length of type, the type should be positioned so that the grid/ graticule line does not impair its legibility. In extreme cases the grid/graticule may be broken to accommodate type.

Examples:



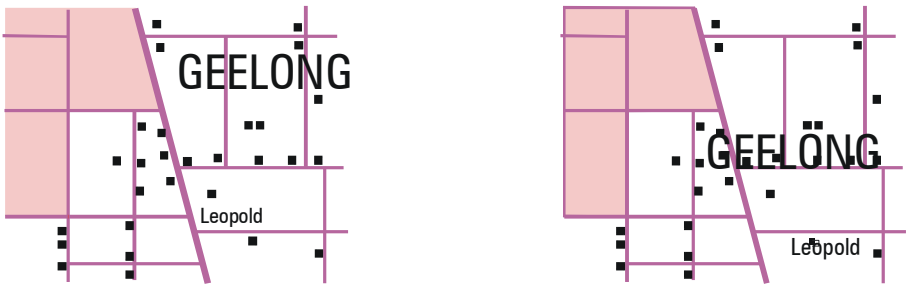
Preferred *Less desirable*

8. Where possible, overprinting of type and detail, which print in the same colour, is to be avoided. In unusual cases, particularly where smaller type sizes are involved, it is necessary to block out features when legibility of type would otherwise be impaired.

   The overprinting of type (letter touching letter) regardless of printing colour is not permissible in any circumstances.

9. Type should be positioned to avoid overprinting features that are to be printed in black, especially where such features are parallel to the type. When it becomes necessary to position labelling across linear features that are at right or near right angles to one another, the type is placed so that the letters of the label clear the perpendicular features.

Examples:



Preferred *Less Desirable*

10. Names consisting wholly of capital letters are centred within the area being identified, built-up areas excepted. If the area is extensive letter spacing is desirable.

    Line spacing between words (leading) to be equal.

EXAMPLE: Type is generally centred, if possible, when placed within the area feature.

If the name does not fit within the area then the following rules apply:

EXAMPLE: Type is left justified when placed to the right of the area feature.

EXAMPLE: Type is right justified when placed to the left of the area feature.

If the area is extensive, letter spacing is desirable. When spacing type, the spacing between letters is not to exceed four (4) times the point size of the letters. Where letter spacing is used and the name consists of two or more words, the space between words is equal to three (3) times the space between the letters. Type that is letter or word spaced must be positioned so that the name stands out distinctly as a complete name. In congested areas, caution is advised on the use of maximum spacing since the continuity of names may be disrupted.

EXAMPLE:

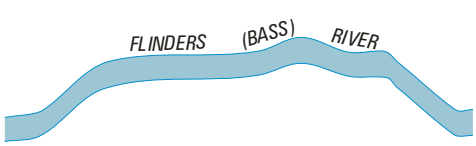
RESERVE (12 point)
R E S max letter spacing 36 point (3 times type size for 2 words)
36 point
It is not permissible to letter space names shown in both capital and lower case lettering.

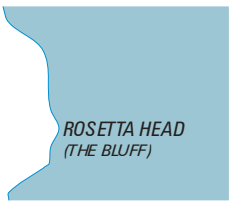
Descriptive labels should be centred within or adjacent to the features area. Labels are aligned parallel to the northing grid line, however, in unusual cases they may be positioned to follow the general shape of the feature.

11. Alternate names are preferably positioned below the primary name in the case of point or area features, and following the primary name in the case of linear features. Alternate names are shown in parentheses and in the same style of type as the primary name, but one point size smaller. An exception to this Rule occurs when the primary name is in the smallest type available or is in the smallest legible size.

    In cases where the primary name includes a generic term (eg. 'River', 'RANGE'), the alternate name is placed between the primary and the generic term. Single word alternatives are placed adjacent to the primary name.

Examples:





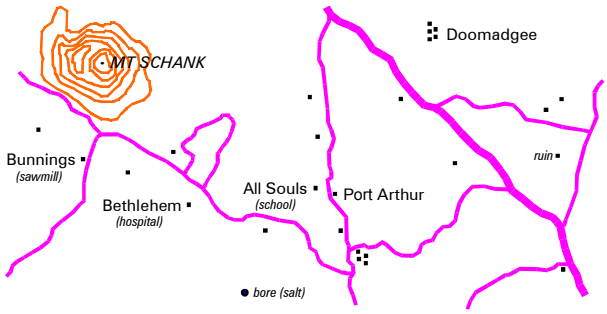
12. Descriptive terms may be added for the purpose of clarifying a primary name (eg. 'ruin', 'walled', 'abandoned'). For point and linear features descriptive terms are enclosed by parentheses. The parenthesised type is preferably centred directly below or positioned immediately following the primary name it clarifies.

    A descriptive term included where there is no primary name or label will not be parenthesised.

    All descriptive labels on point and linear features, parenthesised or not, will be shown entirely in lower case lettering and italicised.

    See chapter 5.7 Descriptive Notes on Area Features for handling of descriptive notes on area features.

    Example:



13. Punctuation is omitted except for hyphens and apostrophes that are integral parts of official designations. Full stops are not to be used with abbreviations.

14. At 1:250 000 feature names should be placed so as to be wholly within or wholly outside the areas of overlap within adjacent maps. At 1:100 000 no annotation should exist in the bleed (map overhang).

15. Case sensitive names: Lower and uppercase letters will be used if they are an integral part of the proper name. For example: McLarty Hills or McLARTY HILLS; St George or St GEORGE. In all instances, the lower case letter will be aligned at the bottom of the other letters.

5.4 Populated Centres

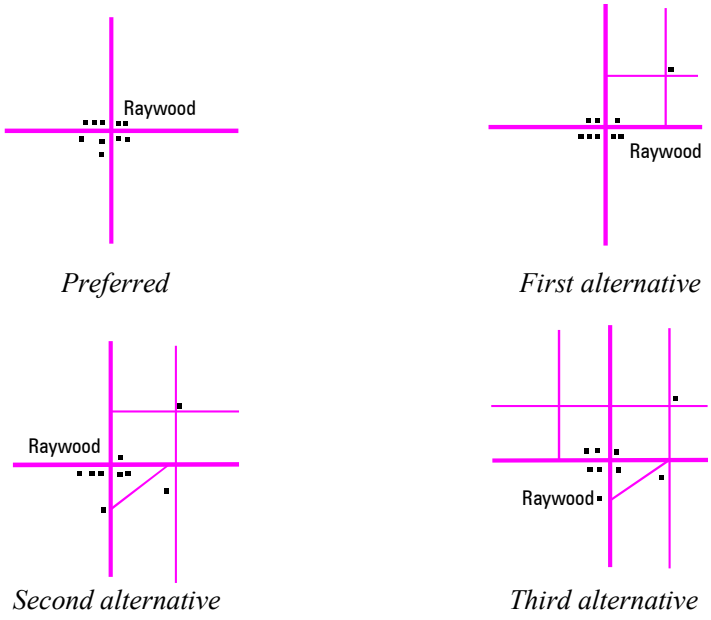
Populated centres are depicted on the map by either individual buildings, clusters of buildings, built-up areas or built-up area symbols. The type size and style for place names are selected to fit predetermined classifications relative to population. See Chapter 8 (1:2500 000 Scale Type Specifications) and Chapter 9 (1:100 000 Scale Type Specifications).

When identifying a built-up area, it is preferred that the name be positioned entirely within the limits of the area, provided that the legibility of type or continuity of cultural features is not impaired. When preferred positioning cannot be adhered to, the name is placed adjacent to the feature and aligned in accordance with 5.3 rule 5.

When naming localities, the term 'mission' and 'homeland' should be avoided - refer to Geoscience Australia for correct name. Indigenous community names also need to be checked against geographic source information as many have changed in recent years. The word ‘Community’ may be used if it is the official name, eg: Burringah Community.

The names for localities represented by concentrated groups or clusters of building symbols are positioned in close proximity to the subject area. Type is preferably placed at, or near, the junction of the most heavily travelled route(s) passing through the populated centre.

Example:

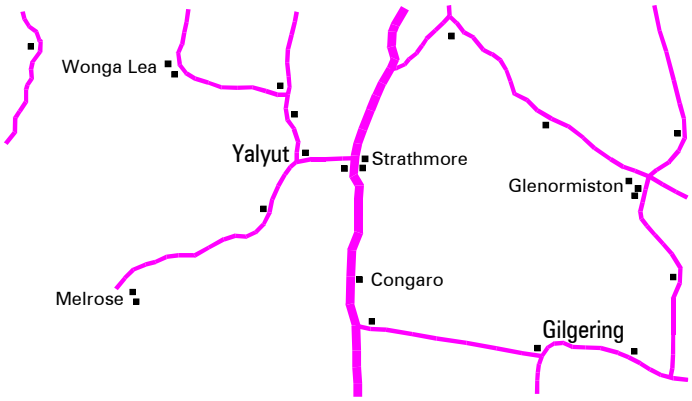


Preferred *First alternative*

Second alternative *Third alternative*

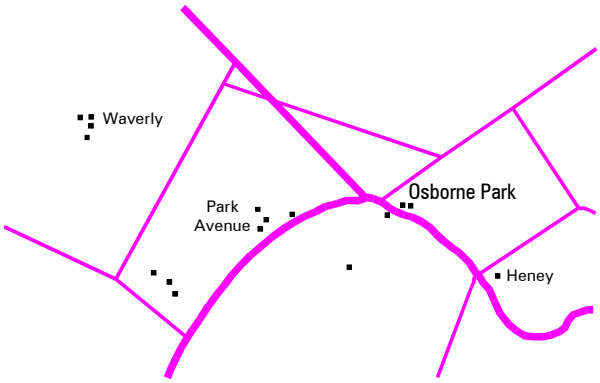
A locality comprised of several individual homesteads requires unique treatment in that the name is placed over the approximate centre of the area covered by the locality. It is preferable that the type be placed parallel to the northing grid line (See over page for example …)

Example:



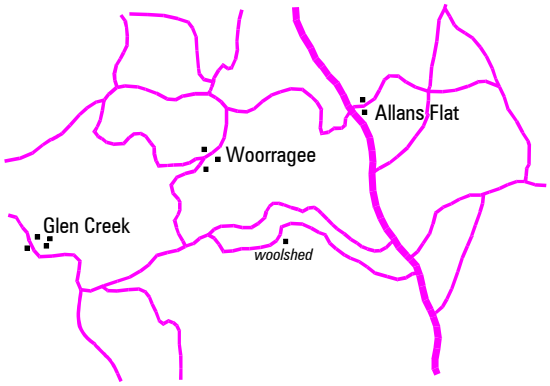
Instances will occur, particularly in flat areas, where localities are comprised of semi-scattered buildings strung out along the major communication routes. When labelling this type of locality the name is placed adjacent to the junction of the main thoroughfares bisecting the locality.

Example:



In some rural areas, localities are comprised of widely dispersed buildings. These areas are often identified by references to prominent local features. Where this occurs, the name is positioned in the immediate vicinity of the feature referenced and extended toward the general area it serves to identify.

Example:



Proper names of well-known sections within a city, or outlying suburban areas, are shown in populated place type. The type is shown in capital and lower case lettering and is centred in the area concerned. The type size is scaled relative to the size of the subject area.

Names of places located along shorelines are placed entirely in the open-water area. Where developed areas are located adjacent to (but inland from) the shoreline, the name is placed entirely on the land area.

Examples:

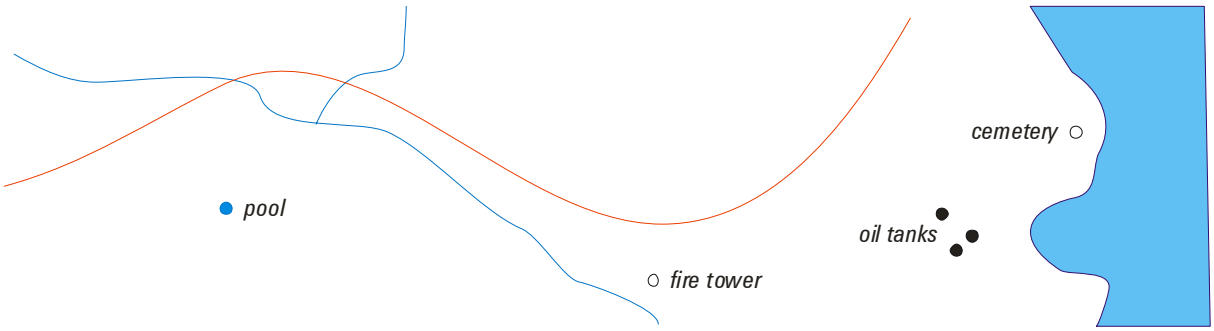
Preferred

Less desirable

5.5 Point Features

An individual symbol or small concentrated groups of symbols may be labelled. The labels for features are usually descriptive. When labelling point features the type is positioned in accordance with chapter 5.3 rule 5. Where there are large numbers of instances of a feature, a general descriptive note may be included so as to reduce clutter, for example ‘pools’. Care will be taken to avoid ambiguity when this is done.

Examples:



5.6 Linear Features

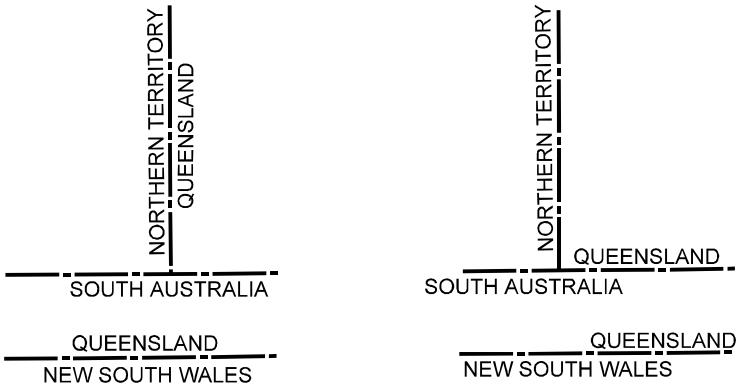
Linear features include such items as roads, railways, power transmission lines, pipelines, double and single line watercourses, and similar features. When labelling linear features, it is preferable that the type be placed parallel to and above the upper side of the symbol as viewed from the south neatline.

Names for linear features are never letter spaced or extended. When a name placed at the middle point of a linear feature does not identify it sufficiently, the name is repeated at appropriate intervals to further clarify the symbol.

Where possible, labelling is placed along the straight segments of linear features rather than the curved portions. Where there is no alternative but to label the curved portions, type is to be positioned in accordance with chapter 5.3 rule 2.

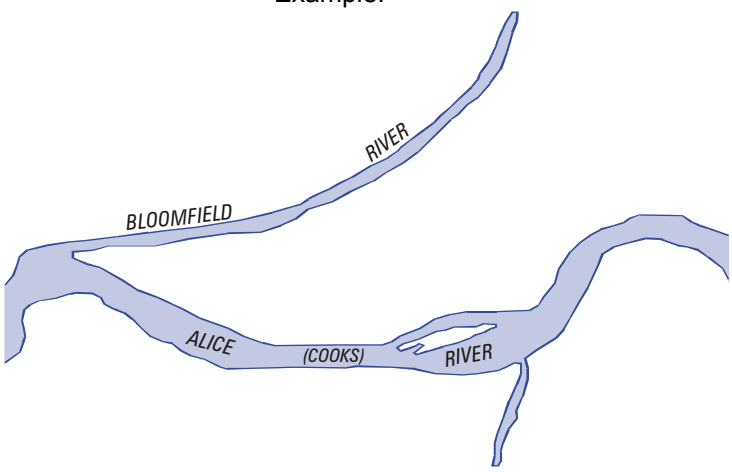
When labelling boundaries, the names are placed on the side of the boundary that corresponds with the area being identified. It is preferred that the names be positioned adjacent to one another and parallel to the boundary symbol separating them.

Examples:



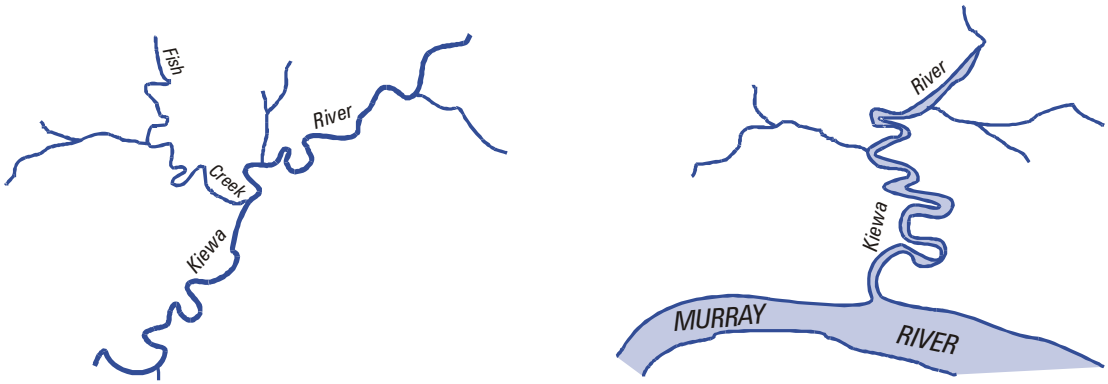
In the placement of type referring to drainage features, "U" or inverted "U" shaped labelling is to be avoided. When labelling double line watercourses, it is desirable to have the names within the shorelines, provided the feature is wide enough to accommodate the entire name. Type is never positioned partially in or out of double line streams.

Example:



When labelling watercourses that are predominantly double line, the name is shown wholly in capital letters. The names for single line watercourses are shown in capital and lower case lettering.

Examples:



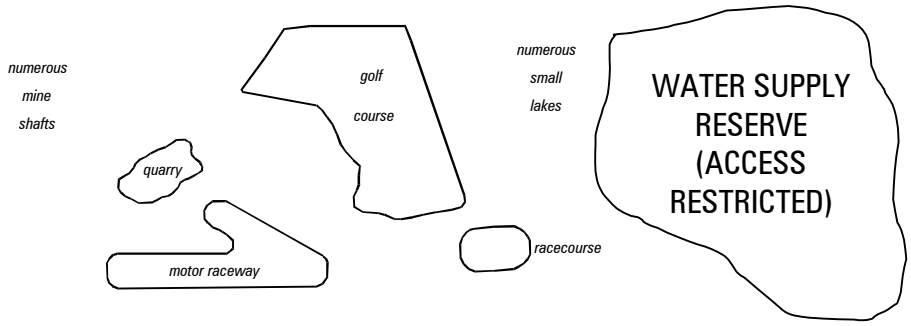
Where a feature is too small to show the identifying type in its entirety, the authorised abbreviation given in Chapter 10 Authorised Abbreviations is to be used.

5.7 Descriptive Notes on Area Features

Included in this category are features that are indicated only by descriptive labelling or where a descriptive label gives more information on the feature. The type should be centred within or adjacent to the features area. Labels are aligned parallel to the grid, however, in unusual cases they may be positioned to follow the general shape of the feature. See Appendix A, feature class dictionary, Park, Distorted surface, Open Cut/Mining area and Rocky Outcrop. Descriptive notes may also be used for areas not stored as features in the database.

For unnamed and otherwise unlabelled area features the descriptive notes will be as specified in chapters 8 (1:250 000 Type Specifications) and 9 (1:100 000 Type Specifications). For large areas the descriptive note may be repeated. For named or otherwise labelled areas such as reserves the descriptive notes will be in the same style and size as the name.

Examples:



5.8 National Parks and Similar Features

When labelling national parks and similar features, it is preferable that the type be centred within the feature, space permitting. When the area is extensive, letter spacing is desirable (see Example 1).

Descriptive labels such as (ACCESS RESTRICTED) will be shown in the same type size as the reserve name label (see Example 2).

It is not uncommon to find smaller designated land tracts as integral parts of larger designated land areas. Labelling of the smaller designated areas is to be in a type size appropriate to the size of the area.

Where a national park or other reserve consists of several separate areas each area is named. In cases where a national park or other reserve includes several offshore islands or both mainland and offshore island(s), type pertaining to the national park or other reserve will also be placed below the island name in a size relative to the size of the island. Where a reserve includes areas of both land and sea the type will be placed in which ever is the larger of the land or sea area (see Example 3).

Situations may occur where a large number of islands form a National Park or Reserve and the Islands have the same name as the National Park or Reserve. Where the addition of the Park or Reserve name to each island would result in clutter, the abbreviation '(NP)' may be added after the island names. In this case the name of the reserve must appear at least once on the map (see Example 4).

Examples:

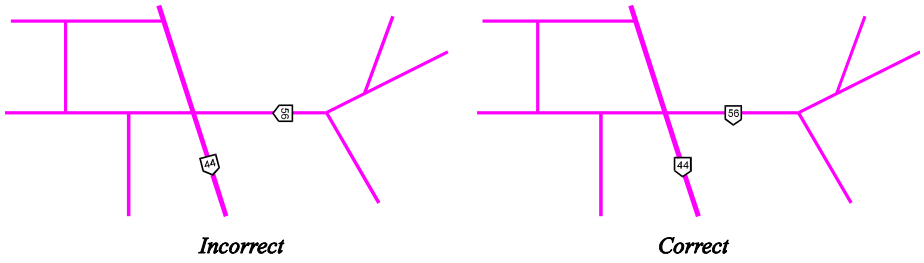
Example 1 Example 2 Example 3 Example 4

A descriptive note may be added on the map (space and legibility permitting) where a reserve or prohibited area boundary is not displayed because it follows the coastline, for example ' *reserve boundary follows coastline*' or ' *prohibited area boundary follows coastline'*.

5.9 Route Markers and Distance Indicators

Route markers are centred on their respective road symbols and aligned parallel to the grid line. Route markers are positioned so as to avoid grid lines, linear drainage symbols, and congested map detail. All other detail is blocked out of route markers.

National Route Marker example:



The following are guides for placement of route markers to assure maximum effectiveness.

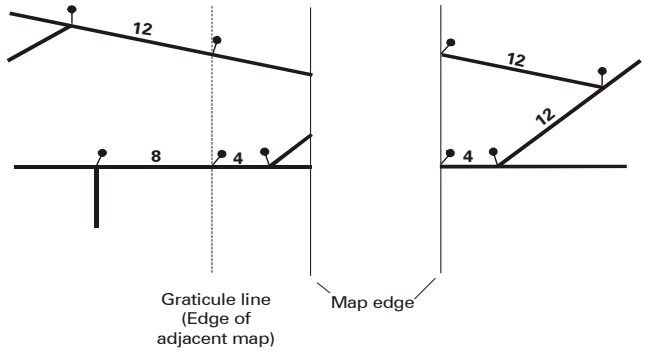
(1) Route markers are positioned in areas free of congested map detail.
(2) On roads that continue onto adjoining sheets, route markers are shown close to the map neatline.
(3) Route markers are shown close to populated places.
(4) Route markers are shown as often as required to ensure identification and reader continuity.
(5) Route markers are shown in the vicinity of road junctions and intersections.
(6) Individual route markers are shown for each route value when roads have a designated combination of two or
more routes. When this occurs, the markers should be shown close together.

Kilometric distance indicators and the associated distances will be placed to avoid ambiguity and allow the calculation of route distances. Particular care should be taken around the map edges with the placement of kilometric distance indicators. Placement of indicators should be consistent between adjacent sheets and allow calculation of distances to continue from one sheet to another.

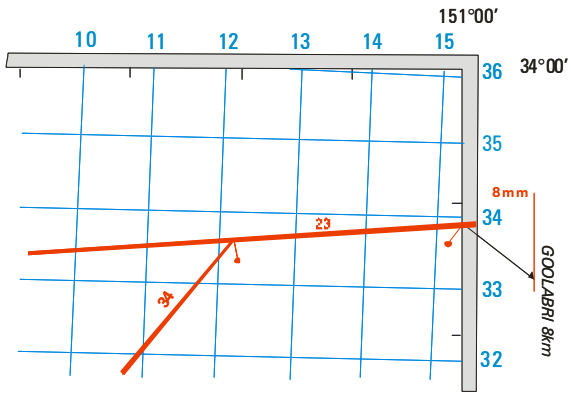
1:250 000 map distance measurement
On the south and west sides of the map, measurements will be shown to the edge of the map. On the north and east sides, distances will be shown to the graticule line which forms the edge of the adjacent map. Where there is a destination point to be indicated within the bleed edge a distance will be given to that point from the graticule line which forms the edge of the adjacent map.

1:100 000 map distance measurement
On the south and west sides of the map, measurements will be shown to the edge of the map. On the north and east sides distances will be shown to the GDA94 graticule line which forms the edge of the adjacent GDA94 map. No destination point will be indicated within the area between the GDA94 and AGD66 graticule lines.

1:250 000 Scale example:



1:100 000 Scale example:



5.10 Relief Features

Features included in this category are: mountains, mountain ranges, ridges, valleys, plains, gorges, peaks, hills, bluffs, tors, and topographic surface characteristics.

In labelling relief features that are extensive in size, the type is positioned slightly above the axis of the landform as viewed from the south neatline. The name may be letter spaced and is aligned parallel to the general formation of the feature.

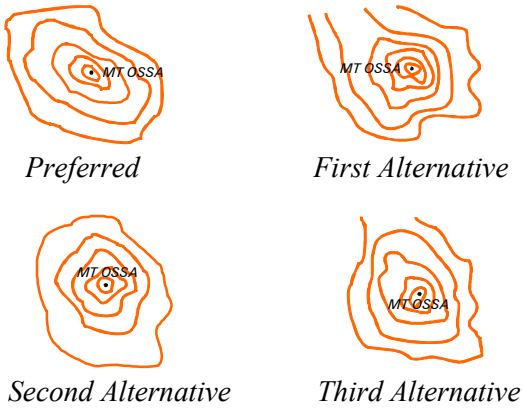
Example:

The names for narrow valleys, gorges, and similar features are preferably placed on the upper side of, and parallel to the axis of the feature identified.

The words ‘Mount’ and ‘Mountain’ will be abbreviated in all cases for these relief features as per the following examples; ‘Mount Donald’ would be shown as ***MT DONALD*** and ‘Glendower Mountain’ as ***GLENDOWER MTN*** on the map. Where ‘Mount’ and ‘Mountain’ form part of the name for a Range relief feature, this abbreviation will not be applied. For features other than relief features, the normal rules for use of abbreviations apply.

When labelling hills, peaks, pinnacles, and similar features, the type is placed in accordance with chapter 5.3 rule 5 provided it does not obscure other prominent detail, and the continuity of the relief remains unchanged. To avoid ambiguity, a spot elevation symbol may be used. Preferred and acceptable alternate positioning of names is established by the following examples:

Examples:



Preferred *First Alternative*

Second Alternative *Third Alternative*

Terms describing the nature of terrain, such as "gilgai" or "lava" are required when such features cannot be precisely identified with reference to the map symbol legend or where definitive labels must serve as the only means of area identification. When supported by a symbol pattern, labels are centred within the subject area. When labelling large areas void of distinctive symbolisation, the term is repeated as often as necessary to properly define area coverage and the approximate limits of the feature.

5.11 Contour Values

Contour values provide a convenient means of reading elevations portrayed by contour lines. The number and location of contour values is governed by the nature of the terrain, density of contours, and the number of horizontal control points and spot elevations. Areas of complex topography require a greater number of contour values than do areas of simple terrain.

Contours above the datum plane are labelled with positive numerals bearing no prefix. Contours below the datum plane are prefixed with the negative sign (-). Contours that are level with the datum plane are labelled with the numeral 0 (zero). Contours are not broken for contour values.

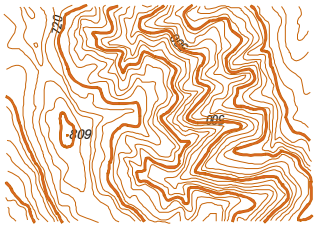
Contours will be labelled with the values reading uphill. Preference is given to them being legible from either the south or east neatline. Values for negative and zero contours are positioned in the same manner.

In the majority of cases, preferential treatment should be given to labelling index contours. In flat areas, however, most contours should be labelled so as to facilitate interpretation of the terrain.

Contour values are centred on the axes of contour lines, and are not positioned in the immediate vicinity of horizontal control points, bench marks, or spot elevations.

Examples:

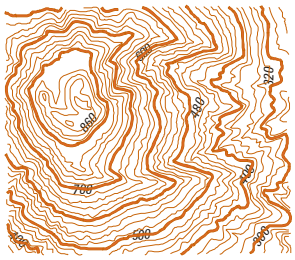
Preferred



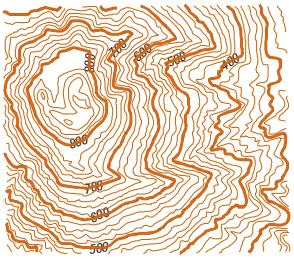
Less Desirable

When labelling contours, sets of numerals are positioned so that a mechanical or stepladder like appearance is avoided.

Examples:



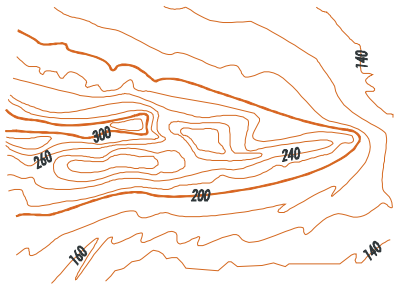
Preferred



Less Desirable

Contour values are most effective when positioned near the ends of spurs, the sides of ridges, and at pronounced changes in topography. Under no circumstances are values positioned in mirror like sequence on each side of a particular ridgeline or landform.

Example:



Contour values are evenly distributed throughout the map sheet thus enabling the user to determine elevation without a prolonged search for reference points. When labelling contours portraying major landforms, values are repeated at distances of from 10 to 15 centimetres. Contour values will be positioned clear of all other detail.

Space permitting, contour values are added to auxiliary and depression contours wherever they are shown.

Isolations should be labelled where possible.

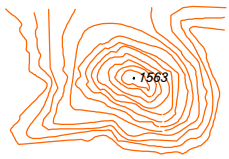
Sufficient values should be positioned near the neatline so that it is possible to determine the value of any contour crossing the neatline. Descriptive labelling will always take precedence over contour labelling.

5.12 Spot Elevations

Spot elevation values are positioned in close proximity to the symbol they identify. Where possible, the elevation values are placed to avoid obscuring features of importance to the map user; for example, peaks, ridges and saddles. It is preferred that the values be positioned to the right of the defined point with the centre of the numerals aligned with the horizontal centre of the referenced symbol.

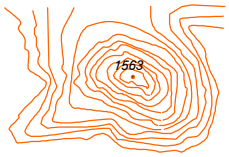
Examples:

Elevation only:



Preferred

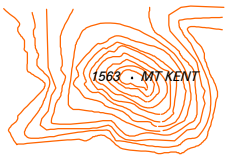
First alternative



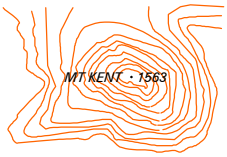
Second alternative

Third alternative

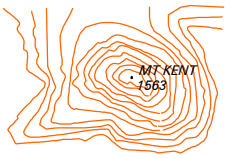
Elevation and feature name:



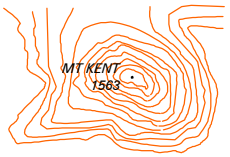
Preferred



First alternative



Second alternative



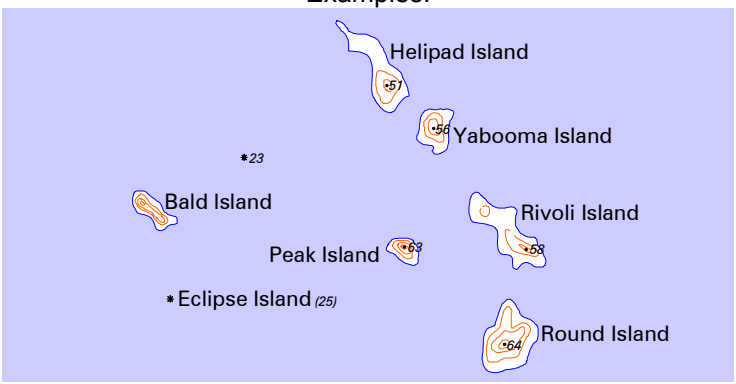
Third alternative

Fourth alternative

Fifth alternative

Instances will occur where spot elevations are provided for islands too small to accommodate the values. In such cases the value is positioned adjacent to the island and aligned in accordance with the previous paragraph. When the island is identified by a proper name, the value is shown at the end of the name and in parenthesis.

Examples:



5.13 Horizontal Control Points

Values of horizontal control points are positioned in accordance with chapter 5.3 Principles of Type Placement rule 5.

The following outlines the procedure for labelling and portraying horizontal control points:

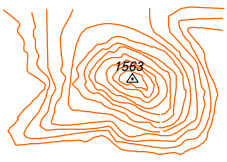
(1) Only three types of information can be added to a horizontal control point.
  (a) elevation,
  (b) name of the feature where horizontal control point is located, and
  (c) alphanumeric code
(2) Only two of the above are shown at any one time.
(3) The order of importance of the type of information is as listed in (1) above.
(4) A horizontal control point can be shown provided one of the pieces of information above is available.
(5) A horizontal control point is not to be shown regardless of classification, if no information is available.
(6) Fourth order horizontal points are not to be shown, however, if height and co-ordinates are known, a spot elevation and dot may be shown.
(7) Destroyed horizontal control points are not to be shown, however, if height and co-ordinates are known, a spot elevation and dot may be shown, and
(8) The horizontal control point identification name is not to be shown.

Examples:

Elevation only:

Preferred

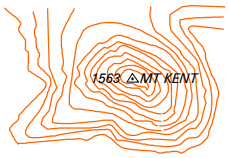
First Alternative



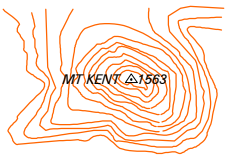
Second Alternative

Third Alternative

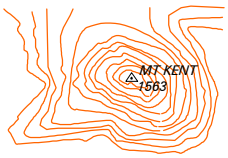
Elevation and feature name:



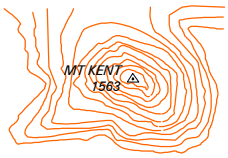
Preferred



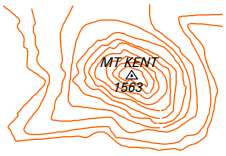
First Alternative



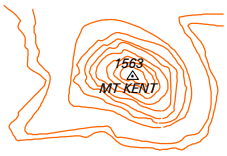
Second Alternative



Third Alternative



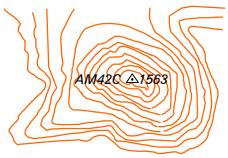
Fourth Alternative



Fifth Alternative

Elevation and alphanumeric identifier:

Preferred

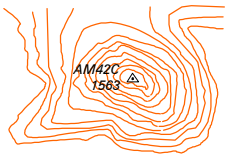


First Alternative

Second Alternative

Third Alternative

Fourth Alternative

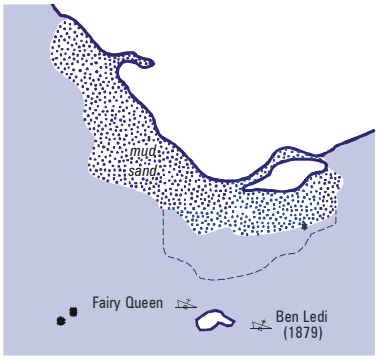


Fifth Alternative

5.14 Coastal Hydrographic Features

Coastal hydrographic features require the use of descriptive notes. Notes will appear wherever they convey information pertinent to the map user or where they clarify situations that could otherwise be confusing. Definitive labels for coastal hydrographic features are positioned as close to their precise location as map detail will allow. The type is positioned to avoid overprinting grid lines and hydrographic map symbols. Where two different characteristics are identified in the same location, such as mud and sand, they are centred one over the other.

Example:

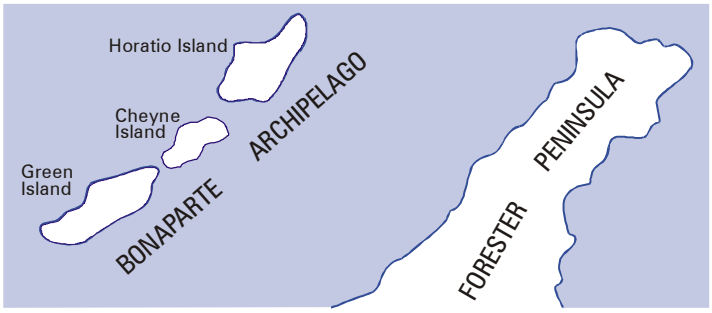


5.15 Capes and Islands

In labelling capes and islands that are of extensive size, the type is centred within the land area and positioned parallel to the northing grid line and, if necessary, letter spaced.

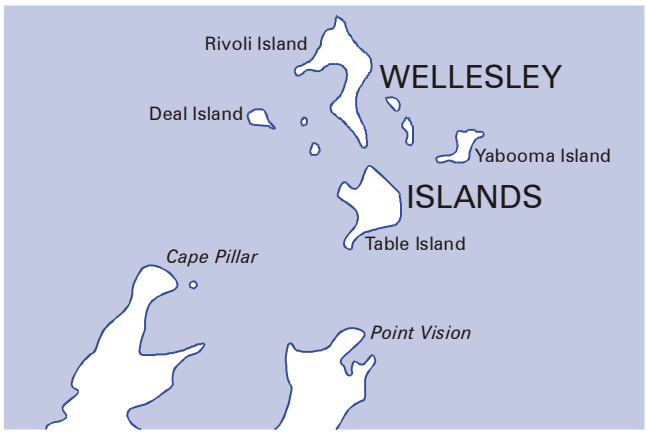
The names for peninsulas and island chains are placed parallel to the general formation of the feature. Where possible, the type identifying peninsulas is positioned within the land area.

Example:



The names for capes, points, and small islands are placed in the open water adjacent to the feature. Wherever possible, the type is placed to the right of the feature. Names are always positioned to avoid overprinting the shoreline.

Example:

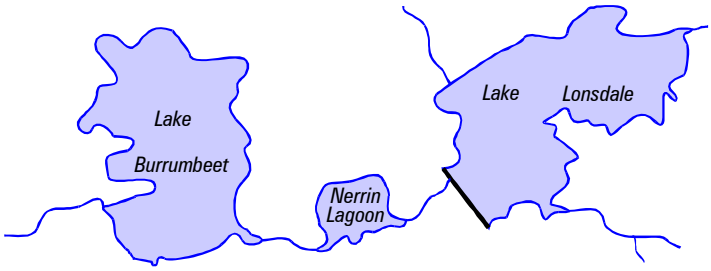


5.16 Waterbodies and Watercourses

In labelling bodies of water whose limits can accommodate the entire name, the type is centred within the limits of the feature. Names are aligned parallel to the northing grid line. When labelling large expanses of water, letter

spacing is desirable.

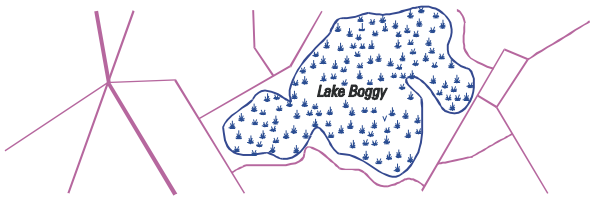
Example:



When labelling small lakes and ponds, the names are positioned in accordance with chapter 5.3 Principles of Type Placement, rule 5.

The identifying names for marshes, swamps, bogs, and similar features are centred within the limits of the feature defined. The type is preferably aligned parallel to the northing grid lines, and, when the area is extensive, letter spacing is desirable.

Example:



For rules on labelling Watercourses and Anabranches, refer to Section 1 chapter 3.8.8 and Section 3 chapter 6.10.1.

5.17 Vegetation Features

The proper names for forests and rainforests are shown wherever there is sufficient space to accommodate the labelling. When labelling vegetation features, the type is centred within the overall limits of the area to be identified. The names are aligned either parallel to the northing grid lines or placed to follow the general shape of the feature. When labelling large expanses of vegetation, letter spacing is desirable.

6. Type Size Selection Criteria

The type sizes and styles prescribed in the following **1:250 000 and 1:100 000** Type Specification sections are to be maintained. In exceptional circumstances, when space prohibits the use of a prescribed size, or the size indicated would distort the relative importance of the feature, a more appropriate size is to be selected.

The appropriate type size will be based on the size of the feature as it appears on the face of the map. For example, if the Murray River appears as one long feature across the face of the map and warrants a 0large type size, and a small section reappears at the neatline, the type size for the small section is based on the length of that small section. Similarly, for area features the type size will be chosen according to the area of the section that is being labelled.

All type is to be shown in black if not otherwise specified.

7. Type Style (Font) Abbreviations

In the following **1:250 000 and 1:100 000** Type Specification sections, styles are abbreviated as follows:

Font abbreviation	***Font***
Z	Zurich
ZI	Zurich Italic
ZB	Zurich Bold
ZBC	Zurich Bold Condensed
ZC	Zurich Condensed
ZCI	Zurich Condensed Italic
SM	Stymie Medium
ZExB	Zurich Extra Bold

Case abbreviation	***Case description***
C	all capitals
CL	capitals and lower case
L	all lower case

Alternative type styles are:

- Acceptable substitute for Stymie is Rockwell. Such substitutions will be consistent across a map sheet.
- Times Bold Italic (see Map Layout Guide requirements) may be substituted by Times New Roman Bold Italic.

The following digital representations of the type may vary from that required depending on system specifications. Hard copy representations of type will be supplied if required.

8. 1:250 000 Scale Type Specifications

8.1 Cultural Features

ROADS, RAILWAYS AND RELATED FEATURES				1:250 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Dual carriageway, Principal Roads, other roads	6	ZI	C	*SOUTHERN FREEWAY* *STUART HIGHWAY* *MILLS ROAD*
Descriptive text notes can be used in areas where many private roads have restricted access, or cleared/seismic lines	8	ZC	C	SOME ROADS IN THIS AREA HAVE RESTRICTED ACCESS NUMEROUS CLEARED LINES MAY POSE A NAVIGATION HAZARD
Foot track	6	ZCI	CL	*Bicentennial National Trail*
Descriptive text (with name included)	6	ZCI	CL	*Bicentennial National Trail follows road*
Descriptive text (without name)	6	ZCI	L	*foot track*
National and state route marker	6	ZC		1 B940
Kilometric distance (red PMS 485)	6	ZB		**35**
Named bridge/tunnel	6	ZC	CL	Westgate Bridge
Named: Railway station, siding, marshalling yard; crossing, landing, underpass/overpass	7	ZC	CL	Mungar Junction Cobbity
Railway gauge	6	ZCI	L	*gauge 1435mm*

AIRCRAFT FACILITIES				1:250 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Airport, International	7	ZC	C	BRISBANE AIRPORT
Airport, domestic and Licensed Aerodrome	7	ZC	CL	Orange Creek Aerodrome

MISCELLANEOUS CULTURAL FEATURES				1:250 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Named cultural features eg. racecourse, yard, quarry, cemetery, mine, ski lift, aerial cableway, golf course, fire tower, lighthouse, automatic weather station etc where space permits	6	ZC	CL	Birdsville Racecourse Point Cook Lighthouse Golden Shoe Mine
Named cultural features in congested areas	5	ZC	CL	Dookie Agricultural College
Wreck	6	ZC	CL	Ben Ladi (1879)

CULTURAL FEATURES DESCRIPTIVE NOTES				1:250 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Generally, features not shown in the map legend will attract a descriptive note and will label the content and/or use of a feature, eg *'pipeline (oil)', 'four wheel drive, chimney (65m)',* etc	6	ZCI	L	*oil refinery* *racecourse* *chimney (65m)* *tower (50m)* *vermin proof fence* *position approximate*

POPULATED PLACES AND BUILDINGS				1:250 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Capital city	16	ZB	C	**ADELAIDE**
City 100 000 and over	16	ZC	C	GEELONG
City 50 000 to 100 000	14	ZC	C	BENDIGO
City 25 000 to 50 000	12	ZC	C	ORANGE
City 5 000 to 25 000	10	ZC	C	DEVONPORT
Town 1 000 to 5 000	10	ZC	CL	Nambour
Town or settlement less than 1000	8	ZC	CL	Cobar
Locality or area name (cultural feature)	8	ZC	CL	Ravenswood
Suburb within BUA	7	ZC	CL	Enoggera

POPULATED PLACES AND BUILDINGS (continued ……)				1:250 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Named outstation, outcamp	6	SM	CL	Kennedy Outstation
Named homestead in Closely Settled Area as indicated in Appendix C	6	SM	CL	Carinyah
Named homestead in Moderately and Sparsely Settled Area as indicated in Appendix C	7	SM	CL	Carinyah
Very large homestead in remote areas where there are no populated places.	8	SM	CL	Brunette Downs
Named building; group of buildings forming one entity. The type size should be tailored to suit the importance/size of the feature.	6, 7	ZC	CL	Kurnell Oil Refinery Exon Brickworks

AREA FEATURES Prohibited Areas, Reserved Areas etc.				1:250 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Small area where type will not fit or where type will just fit in. Size will depend on area.	5, 6	ZC	C	PROHIBITED AREA PROHIBITED AREA
Area up to 7 cm in any direction	7	ZC	C	BELAIR RECREATION PARK
Area up to 12 cm in any direction	9	ZC	C	COURADDA STATE FOREST
Area up to 18 cm in any direction	12	ZC	C	CONDALE NATIONAL
Area covering more than 18 cm in any direction	14	Z	C	LAMINGTON NAT
Area between 30% and 60% of map area	18	Z	C	DEUA NATIONAL
Area covering more than 60% of map area	24	Z	C	KAKADU NA

AREA FEATURES Indigenous Land names				1:250 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
As named on 'Indigenous Land Names' Guide				
Area between 20% and 60% of map area	18	Z	C	NGAANYATJARA
Area greater than 60% of map area	24	Z	C	NGAANYATJ

AREA FEATURES **Large Area names / Regional names**				**1:250 000**
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Large Areas as named on the Appendix F - 'Large Area Feature' Guide.				
Area less than 30% of map area.	14	ZI	C	*KIMBERLEY*
Area between 30% and 60% of map area	18	ZI	C	*KIMBERLEY*
Area greater than 60% of map area	24	ZI	C	*KIMBERLEY*

AREA FEATURES **Large Area names/Regional names (Continued ….)**				**1:250 000**
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**

Wherever possible letter spacing should be used for type sizes 14 point and above to enable large or irregularly shaped areas to be labelled in a balanced fashion. This requirement may not be applicable in all cases due to varying density of map detail and other aesthetic considerations.

Notes for areas of restricted access such as Commonwealth Areas proclaimed under the Defence (Special Undertakings) Act Specified maps within the Northern Territory (see the relevant Project File 'Special Instructions' and Appendix O – 'Indigenous Land Names' Guide) will include one or more labels where sufficient space allows	8	ZC	C	THIS AREA LIES WITHIN THE COMMONWEALTH PERMITS MAY BE REQUIRED FOR ENTRY INTO OR TRAVELLING THROUGH INDIGENOUS LANDS & COMMUNITIES

BOUNDARIES and similar features				**1:250 000**
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
International name along boundary Letter spacing may be applied	9	ZB	C	**AUSTRALIA** **A U S T R A L I A**
State or Territory name along boundary Letter spacing may be applied	8	Z	C	QUEENSLAND Q U E E N S L A N D
Tropic of Capricorn	6	Z	CL	Tropic of Capricorn

8.2 Hydrographic Features

FORESHORE AND OFFSHORE FEATURES **Ports, Harbours, Bays, Inlets, Estuaries and similar features**				**1:250 000**
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Small features or congested areas	6	ZCI	CL	*Laguna Bay*
Small features where type will not fit within	7	ZCI	CL	*Sydenham Inlet*
Small features where type will just fit or where size is up to 3cm in any direction	8	ZCI	CL	*Jervis Bay*
Features up to 7cm in any direction	8	ZCI	C	*PORT JACKSON*
Features up to 12cm in any direction	10	ZCI	C	*PORT JACKSON*
Features up to 18cm in any direction	12	ZCI	C	*PORT JACKSON*
Features in excess of 18cm in any direction. Larger type may be used if the 14 point label is not sufficiently prominent	14, 16	ZCI	C	*PORT JACKSON* *BOTANY BAY*

OCEAN, SEA, GULF, STRAITS and similar features				**1:250 000**
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Features up to 12 cm in any direction	10	ZI	C	*STORM BAY*
Features up to 18 cm in any direction	12	ZI	C	*EXMOUTH GULF*
Features up to 25 cm in any direction	14	ZI	C	*BASS STRAIT*
Oceans and seas up to 30% of map area. Gulfs, bays, straits etc in excess of 25 cm where there is no ocean or sea name	18	ZI	C	*SPENCER GULF*
Oceans and seas covering more than 30% of map area	20	ZI	C	*CORAL SEA*
Oceans and seas more than 60% of map area	30	ZI	C	*PACIFIC*

Wherever possible letter spacing should be used for type sizes 14 point and above to enable large or irregularly shaped areas to be labelled in a balanced fashion. This requirement may not be applicable in all cases due to varying density of map detail and other aesthetic considerations.

Where space permits, areas of sea will include the caution note	10 & 5	ZC	C & CL	CAUTION: THIS MAP IS NOT TO BE USED FOR MARITIME NAVIGATION PURPOSES Refer to the appropriate hydrographic chart for depth information

ISLANDS				1:250 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Very small features or congested areas	6	Z	CL	Tom Thumb Island
Small features where type will not fit within	7	Z	CL	Althorpe Island
Small features where type will just fit or where size is up to 3 cm in any direction	8	Z	CL	Tasman Island
Features up to 7 cm in any direction	8	Z	C	ROTTNEST ISLAND
Features up to 12 cm in any direction	10	Z	C	BATHURST ISLAND
Features up to 18 cm in any direction	12	Z	C	GROOTE EYLANDT
Features in excess of 18 cm in any direction	14	Z	C	FRASER ISLAND
Features between 30% and 60% of map area	18	Z	C	KANGAROO ISL
Features covering more than 60% of map area	24	Z	C	MELVILLE IS

Wherever possible letter spacing should be used for type sizes 14 point and above to enable large or irregularly shaped areas to be labelled in a balanced fashion. This requirement may not be applicable in all cases due to varying density of map detail and other aesthetic considerations.

ROCKS, REEFS, SHOALS and similar features				1:250 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Very small features or congested areas	6	ZC	CL	Llewellyn Reef
Small features where type will just fit or where size is up to 3 cm in any direction	8	ZC	CL	Darley Reef
Features up to 7 cm in any direction	8	ZC	C	STANLEY REEF
Features up to 12 cm in any direction	10	ZC	C	OTTER REEF
Features up to 18 cm in any direction	12	ZC	C	EGRET REEF
Features in excess of 18 cm	14	ZC	C	GREAT BARRIER REEF

Wherever possible letter spacing should be used for 14 point type to enable large or irregularly shaped areas to be labelled in a balanced fashion. This requirement may not be applicable in all cases due to varying density of map detail and other aesthetic considerations.

CAPES, POINTS, HEADLANDS, BEACHES, CAVES, FLATS, BLOWHOLES, CLIFFS				1:250 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Small features	6	ZI	CL	*Cape Freycinet*
Prominent features	6	ZI	C	*CAPE JAFFA*
Very prominent features	8	ZI	C	*CAPE YORKE*

PROMONTORIES, PENINSULAS				1:250 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Small features up to 3 cm in any direction or congested areas	6	ZI	C	*YOUNGHUSBAND PENINSULA*
Features up to 7 cm in any direction	8	ZI	C	*PERON PENINSULA*
Features up to 12 cm in any direction	10	ZI	C	*WILSONS PROMONTORY*
Features up to 18 cm in any direction	12	ZI	C	*GOVE PENINSULA*
Features in excess of 18 cm	14	ZI	C	*TASMAN PENINSULA*
Features between 30% and 60% of map area	18	ZI	C	*COBOURG PENI*
Features covering more than 60% of map area	24	ZI	C	*YORKE PENI*

Wherever possible letter spacing should be used for type sizes 14 point and above to enable large or irregularly shaped areas to be labelled in a balanced fashion. This requirement may not be applicable in all cases due to varying density of map detail and other aesthetic considerations.

INLAND HYDROGRAPHIC FEATURES Creeks, Rivers, Irrigation channels				1:250 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Short feature up to 10 cm long	7	ZCI	CL	*Sandy Creek*
Single line features up to 30 cm long reducing to 7pt CL at the source	8	ZCI	CL	*Maroochy River*
Double line features up to 30 cm long. Single line features over 30 cm long, reducing 8pt CL to 7pt CL at the source	8	ZCI	C	*RIVER TORRENS*
Large double line features reducing successively towards its source	12	ZCI	C	*MURRAY RIVER*

LAKES, DAMS, LAGOONS, SWAMPS, LARGE WATER AREAS, CLAYPANS, WATERHOLES, ROCKHOLES, FALLS, SPRINGS, RAPIDS etc				1:250 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Point or small feature where type will not fit within	7	ZCI	CL	*Wallenjoe Swamp*
Small feature where type will just fit or where size is up to 3 cm in any direction	8	ZCI	CL	*Lal Lal Falls*
Features up to 7 cm in any direction	8	ZCI	C	*LAKE PEDDER*
Features up to 12 cm in any direction	10	ZCI	C	*THE COORONG*
Features up to 18 cm in any direction	12	ZCI	C	*LAKE ARGYLE*
Features in excess of 18 cm	14	ZCI	C	*LAKE GAIRDNER*
Features between 30% and 60% of map area	18	ZI	C	*LAKE TORRENS*
Features covering more than 60% of map area	24	ZI	C	*LAKE TORRE*

Wherever possible letter spacing should be used for type sizes 14 point and above to enable large or irregularly shaped areas to be labelled in a balanced fashion. This requirement may not be applicable in all cases due to varying density of map detail and other aesthetic considerations.

CONSTRUCTED HYDROGRAPHIC CULTURAL FEATURES				1:250 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Named single line irrigation channel, canal, drain, pipeline etc	6	ZCI	CL	*Mulwala Canal*
Named double line irrigation channel	6	ZCI	C	*MULWALA CANAL*
Named bore, well, water tank, small dam and similarly constructed point features	7	ZCI	CL	*McDougall Tank*
Dam, weir, or reservoir wall, wharf, groyne, pier, jetty, mole, breakwater, lighthouse, beacon, lock, seawall and pipeline etc	6	ZC	CL	Forrester Jetty

HYDROGRAPHIC FEATURES DESCRIPTIVE NOTES				1:250 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
To be used on all unnamed features not shown in the map legend and to describe a feature	6	ZCI	L	*numerous soaks* *bore (alkaline)* *numerous small dams* *areas subject to rapid tidal change*

8.3 Relief Features

MOUNTAIN RANGES, DESERTS, PLAINS, PLATEAUX, RIDGES, BLUFFS, SCARPS etc				1:250 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Small features up to 4 cm in any direction	6	ZI	C	*BLACKALL RANGE*
Features up to 7 cm in any direction	8	ZI	C	*ATHERTON TABLELANDS*
Features up to 12 cm in any direction	10	ZI	C	*BLUE MOUNTAINS*
Features up to 18 cm in any direction	12	ZI	C	*BARKLY TABLELAND*
Features in excess of 18 cm	14	ZI	C	*GREAT DIVIDING RAN*
Features between 30% and 60% of map area	18	ZI	C	*GIBSON DESERT*
Features covering more than 60% of map area	24	ZI	C	*TANAMI DES*

Wherever possible letter spacing should be used for type sizes 14 point and above to enable large or irregularly shaped areas to be labelled in a balanced fashion. This requirement may not be applicable in all cases due to varying density of map detail and other aesthetic considerations.

MOUNTAINS, CRESTS, KNOBS, HILLS, PEAKS, TORS, PINNACLES etc				1:250 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Normal feature	5	ZI	C	*QUOIN HILL*
Prominent feature (use sparingly)	7	ZI	C	*MT KOSCIUSZKO*

VALLEYS, GAPS, CANYONS, GORGES, CHASMS, RAVINES, ROCKS, CLIFFS, LOOKOUTS, SINKHOLES, FLATS etc				1:250 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Small feature	6	ZI	CL	*Wrights Lookout*
Prominent feature	7	ZI	CL	*Stanley Chasm*
Very prominent feature	7	ZI	C	*KIEWA VALLEY*

RELIEF FEATURES DESCRIPTIVE NOTES				1:250 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
To be used on all unnamed features not shown in the map legend or to describe a feature or a group of features	6	ZCI	L	*numerous sinkholes* *numerous anthills* *average height of sand ridges 18 metres* *gilgai* *lava flow* *rocky outcrop*

CONTOURS AND CONTROL DATA				1:250 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Contour / Auxiliary Contour value	5	ZCI		*300*
Horizontal control point and elevation	5	ZI		*NSW 389*
Bench mark and elevation	5	ZI	C	*BM 1902*
Normal spot elevation	5	ZI		*753*
Highest known elevation in map area	8	ZI		*2229*
Small island elevation	6	ZI		Green Island *(21)*

8.4 Vegetation Features

RAINFORESTS, FORESTS etc				1:250 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Small features up to 4cm in any direction	6	ZI	C	*EVELYN RAINFOREST*
Features up to 6cm in any direction	8	ZI	C	*FROME RAINFOREST*
Features up to 12cm in any direction	10	ZI	C	*HOGARTH RAINF*
Features up to 18cm in any direction	12	ZI	C	*KNIGHTS RAINF*
Features in excess of 18cm	14	ZI	C	*EVELYN RAINF*
Features covering more than 30% of map area	18	ZI	C	*FROME RAINF*

Wherever possible letter spacing should be used for type sizes 14 point and above to enable large or irregularly shaped areas to be labelled in a balanced fashion. This requirement may not be applicable in all cases due to varying density of map detail and other aesthetic considerations.

8.5 Marginalia

Diagrams: Magnetic Declination Diagram Climatic Graphs Grid Reference Diagram Map of Australia Locality Diagram Graticule and Grid Colours for Logos, Miscellaneous Marginalia and Bar code type Rules for map names and State names Road destination arrows guidelines	Refer to Appendix B for type specifications associated with each diagram.
Surround details including: About this Map Map Reliability & Copyright About the NATMAP Series About Geoscience Australia Your Feedback is Welcome Acknowledgments Production note Logos GEOCAT reference number Map names on cover Legend Scale bar and map titles Marginalia text placement	Refer to the 1:250 000 NTMS Map Layout Guides for type specifications associated with each panel.

9. 1:100 000 Scale Type Specifications

9.1 Cultural Features

ROADS, RAILWAYS AND RELATED FEATURES				1:100 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Dual carriageway and Principal Roads	6	ZI	C	*SOUTHERN FREEWAY* *STUART HIGHWAY* *PRINCES HIGHWAY*
Other roads	5	ZI	C	*MILLS ROAD*
Descriptive text notes can be used in areas where many private roads have restricted access, or cleared/seismic lines	8	ZC	C	SOME ROADS IN THIS AREA HAVE RESTRICTED ACCESS NUMEROUS CLEARED LINES MAY POSE A NAVIGATION HAZARD
Foot track	6	ZCI	CL	*Bicentennial National Trail*
Descriptive text (with name included)	6	ZCI	CL	*Bicentennial National Trail follows road*
Descriptive text (without name)	6	ZCI	L	*foot track*
National and state route marker	6	ZC		1 B940
Kilometric distance (red PMS 485)	6	ZB		**35**
Named bridge/tunnel	6	ZC	CL	Westgate Bridge
Named: Railway station, siding, marshalling yard; crossing, landing,underpass/overpass	7	ZC	CL	Mungar Junction Cobbity
Railway gauge	6	ZCI	L	*gauge 1435mm*

AIRCRAFT FACILITIES				1:100 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Airport, International	7	ZC	C	BRISBANE AIRPORT
Airport, domestic and Licensed Aerodrome	7	ZC	CL	Orange Creek Aerodrome

MISCELLANEOUS CULTURAL FEATURES				1:100 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Named cultural features eg. racecourse, yard, quarry, cemetery, mine, ski lift, aerial cableway, golf course, fire tower, lighthouse, automatic weather station etc where space permits	7	ZC	CL	Birdsville Racecourse Point Cook Lighthouse Golden Shoe Mine
Named cultural features in congested areas	6	ZC	CL	Dookie Agricultural College
Wreck	6	ZC	CL	Ben Ladi (1879)

CULTURAL FEATURES DESCRIPTIVE NOTES				1:100 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Generally, features not shown in the map legend will attract a descriptive note and will label the content and/or use of a feature, eg *'pipeline (oil)', 'four wheel drive, chimney (65m)',* etc	6	ZCI	L	*oil refinery* *racecourse* *chimney (65m)* *tower (50m)* *vermin proof fence* *position approximate*

POPULATED PLACES AND BUILDINGS				1:100 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Capital city.	18	ZB	C	**ADELAIDE**
City 100 000 and over	16	ZB	C	**GEELONG**
City 50 000 to 100 000	16	ZC	C	BENDIGO
City 25 000 to 50 000	14	ZC	CL	Orange
City 5 000 to 25 000	12	ZC	CL	Devonport
Town 1 000 to 5 000	10	ZC	CL	Nambour
Town or settlement less than 1000	8	ZC	CL	Cobar
Locality or area name (cultural feature)	8	ZC	CL	Ravenswood
Suburb within BUA	7, 8	ZC	CL	Enoggera Dapto

Proper names of well-known sections within a city, or outlying suburban areas are centred in the area concerned. 8 point type may be used if the 7 point label is not sufficiently prominent

POPULATED PLACES AND BUILDINGS (Continued)				1:100 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Named outstation, outcamp	6	SM	CL	Kennedy Outstation
Named homestead in Closely Settled Area as indicated in Appendix C	6	SM	CL	Carinyah
Named homestead in Moderately and Sparsely Settled Area as indicated in Appendix C	7	SM	CL	Carinyah
Very large homestead in remote areas where there are no populated places.	8	SM	CL	Brunette Downs
Named building; group of buildings forming one entity. The type size should be tailored to suit the importance/size of the feature.	6, 7, 8	ZC	CL	Kurnell Oil Refinery Exon Brickworks Port Kembla Steel Works

AREA FEATURES Prohibited Areas, Reserved Areas etc.				1:100 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Small area where type will not fit or where type will just fit in. Size will depend on area.	5, 6	Z	C	PROHIBITED AREA PROHIBITED AREA
Area up to 7 cm in any direction	7	Z	C	BELAIR RECREATION PARK
Area up to 12 cm in any direction	9	Z	C	COURADDA STATE FOREST
Area up to 18 cm in any direction	12	Z	C	CONDALE NATIONAL
Area covering more than 18 cm in any direction	14	Z	C	LAMINGTON NAT
Area covering more than 30% of map area	18	Z	C	DEUA NATIONAL

Wherever possible letter spacing should be used for type sizes 14 point and above to enable large or irregularly shaped areas to be labelled in a balanced fashion. This requirement may not be applicable in all cases due to varying density of map detail and other aesthetic considerations.

AREA FEATURES Indigenous Land names				1:100 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
As named on 'Indigenous Land Names' Guide				
Area between 20% and 60% of map area	18	Z	C	NGAANYATJARA
Area greater than 60% of map area	24	Z	C	NGAANYATJ

AREA FEATURES **Large Area names / Regional names**				**1:100 000**
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Large Areas as named on the Appendix F - 'Large Area Feature' Guide.				
Area less than 30% of map area.	14	ZI	C	*KIMBERLEY*
Area between 30% and 60% of map area	18	ZI	C	*KIMBERLEY*
Area greater than 60% of map area	24	ZI	C	*KIMBERLEY*

Wherever possible letter spacing should be used for type sizes 14 point and above to enable large or irregularly shaped areas to be labelled in a balanced fashion. This requirement may not be applicable in all cases due to varying density of map detail and other aesthetic considerations.

Notes for areas of restricted access such as Commonwealth Areas proclaimed under the Defence (Special Undertakings) Act Specified maps within the Northern Territory (see the relevant Project File 'Special Instructions' and Appendix O – 'Indigenous Land Names' Guide) will include one or more labels where sufficient space allows	8	ZC	C	THIS AREA LIES WITHIN THE COMMONWEALTH PERMITS MAY BE REQUIRED FOR ENTRY INTO OR TRAVELLING THROUGH INDIGENOUS LANDS & COMMUNITIES

BOUNDARIES and similar features				**1:100 000**
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
International name along boundary Letter spacing may be applied	9	ZB	C	**AUSTRALIA** **A U S T R A L I A**
State or Territory name along boundary Letter spacing may be applied	8	Z	C	QUEENSLAND Q U E E N S L A N D
Tropic of Capricorn	6	Z	CL	Tropic of Capricorn

9.2 Hydrographic Features

FORESHORE AND OFFSHORE FEATURES **Ports, Harbours, Bays, Inlets, Estuaries and similar features**				**1:100 000**
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Small features or congested areas	7	ZCI	CL	*Laguna Bay*
Small features where type will just fit or where size is up to 3cm in any direction	8	ZCI	CL	*Jervis Bay*
Features up to 7cm in any direction	8	ZCI	C	*PORT JACKSON*
Features up to 12cm in any direction	10	ZCI	C	*PORT JACKSON*
Features up to 18cm in any direction	12	ZCI	C	*PORT JACKSON*
Features in excess of 18cm in any direction. Larger type may be used if the 14 point label is not sufficiently prominent	14, 16	ZCI	C	*PORT JACKSON* *BOTANY BAY*

OCEAN, SEA, GULF, STRAITS and similar features				**1:100 000**
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Features up to 12 cm in any direction	10	ZI	C	*STORM BAY*
Features up to 18 cm in any direction	12	ZI	C	*EXMOUTH GULF*
Features up to 25 cm in any direction	14	ZI	C	*BASS STRAIT*
Oceans and seas up to 30% of map area. Gulfs, bays, straits etc in excess of 25 cm where there is no ocean or sea name	18	ZI	C	*SPENCER GULF*
Oceans and seas covering more than 30% of map area	20	ZI	C	*CORAL SEA*

Wherever possible letter spacing should be used for type sizes 14 point and above to enable large or irregularly shaped areas to be labelled in a balanced fashion. This requirement may not be applicable in all cases due to varying density of map detail and other aesthetic considerations.

Where space permits, areas of sea will include the caution note	10 & 5	ZC	C & CL	CAUTION: THIS MAP IS NOT TO BE USED FOR MARITIME NAVIGATION PURPOSES Refer to the appropriate hydrographic chart for depth information

ISLANDS				1:100 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Very small features or congested areas	6	Z	CL	Tom Thumb Island
Small features where type will not fit within	7	Z	CL	Althorpe Island
Small features where type will just fit or where size is up to 3 cm in any direction	8	Z	CL	Tasman Island
Features up to 7 cm in any direction	8	Z	C	ROTTNEST ISLAND
Features up to 12 cm in any direction	10	Z	C	BATHURST ISLAND
Features up to 18 cm in any direction	12	Z	C	GROOTE EYLANDT
Features in excess of 18 cm in any direction	14	Z	C	FRASER ISLAND
Features covering more than 30% of map area	18	Z	C	KANGAROO ISL

Wherever possible letter spacing should be used for type sizes 14 point and above to enable large or irregularly shaped areas to be labelled in a balanced fashion. This requirement may not be applicable in all cases due to varying density of map detail and other aesthetic considerations.

ROCKS, REEFS, SHOALS and similar features				1:100 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Very small features or congested areas	6	ZC	CL	Llewellyn Reef
Small features where type will just fit or where size is up to 3 cm in any direction	8	ZC	CL	Darley Reef
Features up to 7 cm in any direction	8	ZC	C	STANLEY REEF
Features up to 12 cm in any direction	10	ZC	C	OTTER REEF
Features up to 18 cm in any direction	12	ZC	C	EGRET REEF
Features in excess of 18 cm	14	ZC	C	GREAT BARRIER REEF

Wherever possible letter spacing should be used for 14 point type to enable large or irregularly shaped areas to be labelled in a balanced fashion. This requirement may not be applicable in all cases due to varying density of map detail and other aesthetic considerations.

CAPES, POINTS, HEADLANDS, BEACHES, CAVES, FLATS, BLOWHOLES, CLIFFS				1:100 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Small features	6	ZI	CL	*Cape Freycinet*
Prominent features	6	ZI	C	*CAPE JAFFA*
Very prominent features	8	ZI	C	*CAPE YORKE*

PROMONTORIES, PENINSULAS				1:100 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Small features up to 3 cm in any direction or congested areas	6	ZI	C	*YOUNGHUSBAND PENINSULA*
Features up to 7 cm in any direction	8	ZI	C	*PERON PENINSULA*
Features up to 12 cm in any direction	10	ZI	C	*WILSONS PROMONTORY*
Features up to 18 cm in any direction	12	ZI	C	*GOVE PENINSULA*
Features in excess of 18 cm	14	ZI	C	*TASMAN PENINSULA*
Features covering more than 30% of map area	18	ZI	C	*COBOURG PENI*

Wherever possible letter spacing should be used for type sizes 14 point and above to enable large or irregularly shaped areas to be labelled in a balanced fashion. This requirement may not be applicable in all cases due to varying density of map detail and other aesthetic considerations.

INLAND HYDROGRAPHIC FEATURES Creeks, Rivers, Irrigation channels				1:100 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Short feature up to 10 cm long	7	ZCI	CL	*Sandy Creek*
Single line features up to 30 cm long reducing to 7pt CL at the source	8	ZCI	CL	*Maroochy River*
Double line features up to 30 cm long. Single line features over 30 cm long, reducing 8pt CL to 7pt CL at the source	8	ZCI	C	*RIVER TORRENS*
Double line features across or almost across a map sheet, reducing through 8pt C, 8pt CL to 7pt CL at the source	10	ZCI	C	*DARLING RIVER*
Large double line features reducing successively towards its source	12	ZCI	C	*MURRAY RIVER*

LAKES, DAMS, LAGOONS, SWAMPS, LARGE WATER AREAS, CLAYPANS, WATERHOLES, ROCKHOLES, FALLS, SPRINGS, RAPIDS etc				1:100 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Point or small feature where type will not fit within	7	ZCI	CL	*Wallenjoe Swamp*
Small feature where type will just fit or where size is up to 3 cm in any direction	8	ZCI	CL	*Lal Lal Falls*
Features up to 7 cm in any direction	8	ZCI	C	*LAKE PEDDER*
Features up to 12 cm in any direction	10	ZCI	C	*THE COORONG*
Features up to 18 cm in any direction	12	ZCI	C	*LAKE ARGYLE*
Features in excess of 18 cm	14	ZCI	C	*LAKE GAIRDNER*
Features covering more than 30% of map area	18	ZI	C	*LAKE TORRENS*

Wherever possible letter spacing should be used for type sizes 14 point and above to enable large or irregularly shaped areas to be labelled in a balanced fashion. This requirement may not be applicable in all cases due to varying density of map detail and other aesthetic considerations.

CONSTRUCTED HYDROGRAPHIC CULTURAL FEATURES				1:100 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Named single line irrigation channel, canal, drain, pipeline etc	6	ZI	CL	*Mulwala Canal*
Named double line irrigation channel	6	ZI	C	*MULWALA CANAL*
Named bore, well, water tank, small dam and similarly constructed point features	7	ZCI	CL	*McDougall Tank*
Dam, weir, or reservoir wall, wharf, groyne, pier, jetty, mole, breakwater, lighthouse, beacon, lock, seawall and pipeline etc	6	ZC	CL	Forrester Jetty

HYDROGRAPHIC FEATURES DESCRIPTIVE NOTES				1:100 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
To be used on all unnamed features not shown in the map legend and to describe a feature	6	ZCI	L	*numerous soaks* *bore (alkaline)* *numerous small dams* *areas subject to rapid tidal change*

9.3 Relief Features

MOUNTAIN RANGES, DESERTS, PLAINS, PLATEAUX, RIDGES, BLUFFS, SCARPS etc				1:100 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Small features up to 4 cm in any direction	6	ZI	C	*BLACKALL RANGE*
Features up to 7 cm in any direction	8	ZI	C	*ATHERTON TABLELANDS*
Features up to 12 cm in any direction	10	ZI	C	*BLUE MOUNTAINS*
Features up to 18 cm in any direction	12	ZI	C	*BARKLY TABLELAND*
Features in excess of 18 cm	14	ZI	C	*GREAT DIVIDING RAN*
Features covering more than 30% of map area	18	ZI	C	*GIBSON DESERT*

Wherever possible letter spacing should be used for type sizes 14 point and above to enable large or irregularly shaped areas to be labelled in a balanced fashion. This requirement may not be applicable in all cases due to varying density of map detail and other aesthetic considerations.

MOUNTAINS, CRESTS, KNOBS, HILLS, PEAKS, TORS, PINNACLES etc				1:100 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Normal feature	6	ZI	C	*QUOIN HILL*
Prominent feature (use sparingly)	8	ZI	C	*MT KOSCIUSZKO*

VALLEYS, GAPS, CANYONS, GORGES, CHASMS, RAVINES, ROCKS, CLIFFS, LOOKOUTS, SINKHOLES, FLATS etc				1:100 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Small feature	6	ZI	CL	*Wrights Lookout*
Prominent feature	8	ZI	CL	*Stanley Chasm*
Very prominent feature	8	ZI	C	*KIEWA VALLEY*

RELIEF FEATURES DESCRIPTIVE NOTES				1:100 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
To be used on all unnamed features not shown in the map legend or to describe a feature or a group of features	6	ZCI	L	*numerous sinkholes* *numerous anthills* *average height of sand ridges 18 metres* *gilgai* *lava flow* *rocky outcrop*

CONTOURS AND CONTROL DATA				1:100 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Contour / Auxiliary Contour value	5	ZCI		*300*
Horizontal control point and elevation	6	ZI	C	*NSW 389*
Bench mark and elevation	6	ZI	C	*BM 1902*
Normal spot elevation	6	ZI		*753*
Small island elevation	6	ZI		Green Island *(21)*

9.4 Vegetation Features

RAINFORESTS, FORESTS etc				1:100 000
FEATURE DESCRIPTION / CRITERIA	**POINT SIZE**	**STYLE**	**CASE**	**EXAMPLE**
Small features up to 4cm in any direction	6	ZI	C	*EVELYN RAINFOREST*
Features up to 6cm in any direction	8	ZI	C	*FROME RAINFOREST*
Features up to 12cm in any direction	10	ZI	C	*HOGARTH RAINF*
Features up to 18cm in any direction	12	ZI	C	*KNIGHTS RAINF*
Features in excess of 18cm	14	ZI	C	*EVELYN RAINF*
Features covering more than 30% of map area	18	ZI	C	*FROME RAINF*

Wherever possible letter spacing should be used for type sizes 14 point and above to enable large or irregularly shaped areas to be labelled in a balanced fashion. This requirement may not be applicable in all cases due to varying density of map detail and other aesthetic considerations.

9.5 Marginalia

Diagrams: Magnetic Declination Diagram Climatic Graphs Grid Reference Diagram Map of Australia Locality Diagram Graticule and Grid Colours for Logos, Miscellaneous Marginalia and Bar code type Rules for map names and State names Road destination arrows guidelines	Refer to Appendix B for type specifications associated with each diagram.
Surround details including: About this Map Map Reliability & Copyright About the NATMAP Series About Geoscience Australia Production note Logos GEOCAT reference number Map names on cover Legend Scale bar and map titles Neatline and associated text such as: Grid and Graticule specifications Road destination arrows guidelines	Refer to the1:100 000 NTMS Map Layout Guides for type specifications associated with each panel.

10. Authorised Abbreviations

This listing is in alphabetical order by term. The term is given first followed by the abbreviation.

Unless otherwise stated, abbreviations will only be used where use of the full word would cause clutter or ambiguity.

The case of the abbreviation will be the case specified for the feature name in chapter 6 Type Selection Criteria.

Abandoned	Aband
Aeronautical	Aero
Anchorage	Anch
Approximate	Approx
Archipelago	Arch
Australia	Aust
Avenue	Ave
Bay	B
Beach	Bch
Bench Mark	BM
Boundary	Bdry
Bridge	Br
Brook	Bk
Building	Bldg
Built-up Area	BUA
Cape	C
Cemetery	Cem
Channel	Chan
Construction	const
Creek	Ck
Department	Dept
East	E
Electric	elec
Elevation	elev
Estuary	Est
Expressway	Exwy
Factory	Facty
Fire Station	FS
Forest	For
Four Wheel Drive	FWD
Freeway	Fwy
Gulf	G
Great	Gt

Ground	gnd
Group	Gp
Harbour	Har
Head	Hd
Headland	Hd
Height	ht
Highway	HWY
Homestead	HS
Hospital	Hosp
Inlet	In
Intermittent	Int
Island	Is
Islet	It
Junction	Junc
Lagoon	Lagn
Lake	L
Landing	lndg
Light	Lt
Metre(s)	m
Millimetre(s)	mm
Mount	Mt *Use for relief features only*. No abbreviation is to be used for Mount when part of a Range name or a Place name. *Examples:* *MOUNT LOFTY RANGES* Mount Barker
Mounts	Mts, *Use for relief features only*.
Mountain	Mtn *Use for relief features only*.
Mountains	Mtns *Use for relief features only*.
Mouth	Mth
National Park	NP
Nature Reserve	NR
North	N
North-east	NE
North-west	NW
Number	No/no
Orchard	orch
Outstation	OS

Passage	Pass
Peak	Pk
Peaks	Pks
Peninsula	Pen
Perennial	Per
Permanent	perm
Place	Pl
Plantation	pltn
Plateau	Plat
Point	Pt
Police Station	PS
Position	posn
Post Office	PO
Prohibited	prohib
Promontory	Prom
Quarantine	Quar
Railway	Rly
Range	Ra
Recreation Reserve	Rec Res
Reserve	Res
Reservoir	Resvr
River	R
Road	Rd
Rock	Rk
Rockhole	RH
Runway	Rwy
Saint	St
School	Sch
South	S
South-east	SE
South-west	SW
State Forest	SF
Station	Stn
Stock Route	SR
Strait	Str
Street	St
Submerged	submd
Suspension	susp

Tank	Tk
Temporary	temp
Tower	Twr
Underground	Ugd
Vehicle Track	VT
Waterhole	WH
Waterholes	Whs
Water Tank	Wtk
West	W
Wharf	Whf
Wreck	Wk
Yard	Yd

Section 3 - Working Database and Production Information

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1. Scope of this document

This document sets out the Technical Specification for Geoscience Australia's 1:250 000 and 1:100 000 scale working database for the production of GEODATA TOPO-250K Series 2 and TOPO-100K Series 1, and the production of 1:250 000 and 1:100 000 National Topographic Map Series maps.

This document defines the working database structure, lists the information that will be supplied for the production of the database, and lists the documentation and material that will accompany the working database, GEODATA tile and map on submission to Geoscience Australia.

2. General Information

The working database is a set of ARC/INFO layers and associated tables.

The working database:

- is used to generate GEODATA and the National Topographic Map Series maps
- is the data source for the future revision of GEODATA and the National Topographic Map Series maps
- must comply with the standards and rules set out in Sections 1, 2 and 3 of this specification and in the Appendices. The only exception is when a project instruction is issued for a tile specifically allowing a variation.
- is used to populate the topographic Seamless Database of Australia.

The application of data extraction and plotting routines to the working database supplied by producers must result in GEODATA and map repromat identical to that supplied to Geoscience Australia with the working database.

The appendices to this specification include important descriptive information for the working database. In particular, appendices A and H should be referred to obtain a full understanding of the working database. Appendix A is the data dictionary. Appendix H lists the paper size and geographic limits for each tile of the working database.

3. Revision

3.1 Revision sources

Information sources to allow revision of the features in the working database will be supplied by Geoscience Australia. Only these sources will be required. Where producers have access to other information sources, they may be used. However, approval must be obtained from Geoscience Australia before use. All changed features visible on the imagery or contained in the other supplied information sources and meeting the criteria established in the feature class dictionary (see appendix A) will be captured in the working database.

Guidance on resolving conflict between sources is given in chapter 5.5 Priorities in Use of References, Map and Imagery. Where there is an unresolvable problem it should be referred to Geoscience Australia. Where use of the source material creates an anomaly it should also be referred to Geoscience Australia.

3.2 Source Material and Information Supplied by Geoscience Australia

3.2.1 Documentation

MATERIALS / INFORMATION DETAILS	FORMAT / DESCRIPTION
GEOSCIENCE AUSTRALIA TOPOGRAPHIC DATA AND MAP SPECIFICATIONS *The combined Geoscience Australia Topographic Data And Map Specifications for the production of 250K GEODATA Series 2 data, 100K GEODATA Series 1 data and revised topographic maps.* *The Specifications include such things as : Data model description, Data structure information, Glossary of terms, Mapping specifications, Data dictionary and feature cross reference, Map format sheets and Guides.* To be supplied as and when updated.	**Specifications format** Controlled Word files, PDFs and Arc Info Export files on CD-Rom.
PROJECT DOCUMENTATION *Project Files and Instructions for data and map production. Where the map / data tile covers a non-standard area, several files may be provided to give all relevant information.* Note: The project files may include material that post-dates that supplied as source material. Where such material exists it takes precedence over other source material. To be supplied for each work unit.	**File format** Project File folder with associated instructions. Marked-up latest previous edition maps as appropriate.
ERROR/CORRECTION REPORTS *These reports include errors found during the VAT process and errors or changes reported subsequently by internal and external sources. They contain details of errors to be corrected in the production of the new product. Features to be corrected are typically referenced by their coordinate location, together with a brief description of the problem.* To be supplied for each work unit.	**Printed material** Printed reports within project files.

3.2.2 Existing mapping

MATERIALS / INFORMATION DETAILS	FORMAT / DESCRIPTION
SOURCE DATA EXTRACTS Data extracts from the Geoscience Australia Seamless Database will be supplied as primary source material for the revision component of the 1:250 000 GEODATA and map Series. The 1:250 000 Seamless Database is an amalgamation of the completed and revised Series 2 GEODATA tiles. The supplied extracts will include a surrounding extension to the primary area of 0.5 degrees. Source data for the 1:100 000 GEODATA and map Series will vary. This will be listed in the Work Unit Production Record, located within the Project File.	**Data format** **ARC/INFO Double Precision Export files;** Geographical (GDA94) for 1:250 000 Series 2 data **Data Media** Data will be supplied on one of the following media; **DAT tapes** **DVD** **CD-ROM**
SOURCE MAPS Source maps that may be supplied for each Work Unit/Package will generally include printed maps at the source scale ie. 1:250 000 or 1:100 000. These maps have been published by various agencies including Geoscience Australia, Royal Australian Survey Corps and state/territory agencies. Additional large scale mapping from various national and state authorities may also be supplied where it is available, or appropriate, for inclusion. These maps, where supplied, are to be used in conjunction with other supplied source material for the production, revision and verification of the final map and data products.	**Printed material** The printed maps being supplied for each Work Unit will be listed in the Production Record for the Work Unit, and will generally be referenced by map name, edition and scale.
REPRODUCTION MATERIAL (repromat) Copies of reproduction material used to generate the latest previous map editions may be supplied where appropriate for revision and production purposes for 1:100 000 scale, but is unlikely to be supplied for 1:250 000 scale. This reproduction material may only be supplied for individual themes as required eg. to enable the capture of additional features not previously captured.	**Repromat datum (all sheets)** Repromat supplied will typically be on the AGD66 datum. When another datum is used this will be identified on the repromat. **Repromat details** A comprehensive listing of the repromat supplied will be included in the Production Record (in the Project File) for each Work Unit.

3.2.3 Satellite imagery

MATERIALS / INFORMATION DETAILS	FORMAT / DESCRIPTION
SATELLITE IMAGERY / PHOTOGRAPHY Satellite imagery for the revision of the existing Series 2 GEODATA 1:2500 000 and the new Series 1 GEODATA will be supplied as deemed appropriate for each Work Unit. For 1:250 000 map and data production, a combination of LANDSAT TM, SPOT 10m and differing high resolution imagery may be supplied, together with various photography. For 1:100 000 scale map and data production, a combination of 60cm colour orthophotos, Quickbird, Iconis and 2.5m resolution SPOT data may be supplied. Combinations of these items will vary according to the geographical extent and nature of the respective areas being revised.	**Data Media** **DVD** All of the files will be written to DVD. **Imagery format** The imagery will be delivered as ARC/INFO 'imagename'.bil images with the associated 'imagename'.hdr file. Each 'imagename'.hdr file will contain the basic information required by ARC/INFO and additional information to assist with a more complete description of the associated image.

3.2.4 Revision data

Refer to the publication, *Documentation for National Mapping Division Databases* and individual Project Files for up-to-date information regarding data clip supply.

The following geographic reference information will be supplied to enable the revision of data and the production of revised topographic maps. The format media for geographic source information may vary. In particular, digital data may be supplied rather than hard copy data. Producers will be supplied with guidelines for the use of reference information. The information used for a work unit will be documented on the project file.

Information will generally be supplied in the following categories:

Aircraft facilities
Dams and Reservoirs
Electricity
Foot tracks
Horizontal control points
Lighthouses, Wrecks and other Marine features
Mines
Nomenclature (including National Gazetteer of Australia)
Pipelines
Populated Places
Public Lands: (see chapter 5.17 The NPIL Database)
Rail
Reefs
Roads
State borders (GEODATA 100K-COAST)
Towers and Masts
Wharves, Breakwaters, Jetties and Ferry Routes

3.2.5 Map marginalia information

MATERIALS / INFORMATION DETAILS	FORMAT / DESCRIPTION
Information required for the production of the map surround (marginalia); This would typically include the following information supplied for each work unit each time a new Work Unit project is allocated. Other information may also be supplied as required; • **Bar Code number** • **Map edition number** • **Reliability date** • **UTM Zone numbers** • **Magnetic Declination diagram information** • **Climatic graph(s) information** • **GEOCAT production number** • **Copyright date.**	**Delivery method** These numbers, dates or figures will be supplied with the individual Work Unit Project File
The following marginalia information will be issued on a "once-only" basis ie. as a standard issue at the beginning of the program or until a variation is provided via an Action Request. This information will not be generated for each issue of the Work Unit. • **Locality diagram information** • **Australian Coat of Arms** • **Map of Australia**	**Delivery method** These will be supplied in ArcInfo export file (.e00) format

3.3 Scanning Transformation Error Report

The scanning transformation RMS error report will give the difference between known control points and their scanned locations for each piece of material scanned. Points will not be accepted with a difference greater than plus or minus 50 metres at 1:250 000 and plus or minus 20 metres at 1:100 000.

A sample report follows. The report layout may vary but area and coverage information, identification of the control points used, individual residual errors and RMS must be included.

AFFINE Transformation Report Mon Dec 23 11:47:19 1996

Units quoted are in MASTER UNITS unless specified.

Datafile : C:\SUSIE\BETOOHYD.DGN Masterfile : C:\SUSIE\BETOOHYM.DGN

ID	Master Control Monuments (x,y)	Data Transformed Monuments (x,y)
1	[349872.300000 , 7123444.600000]	[349873.929659 , 7123428.288025]
2	[349242.300000 , 7178826.600000]	[349237.220023 , 7178833.546668]
3	[348623.700000 , 7234205.100000]	[348626.543897 , 7234209.506276]
4	[399086.600000 , 7234670.500000]	[399094.244822 , 7234674.842476]
5	[449544.500000 , 7234949.600000]	[449550.005428 , 7234942.321504]
6	[500000.000000 , 7235042.700000]	[499992.392353 , 7235023.575531]
7	[500000.000000 , 7179676.300000]	[499998.063041 , 7179687.991801]
8	[500000.000000 , 7124306.200000]	[500002.834445 , 7124315.153958]
9	[449960.600000 , 7124210.500000]	[449969.185596 , 7124205.623738]
10	[399918.800000 , 7123923.300000]	[399914.162437 , 7123917.921840]
11	[399498.900000 , 7179298.700000]	[399490.300307 , 7179310.844932]
12	[449750.700000 , 7179581.900000]	[449749.517992 , 7179586.383251]

List of Residuals

ID	Weight	X-Component	Y-Component	VectorNorm
1	1.00	-1.629659414	16.311974859	16.393178874
2	1.00	5.079977336	-6.946668010	8.605949464
3	1.00	-2.843897290	-4.406276007	5.244332183
4	1.00	-7.644821656	-4.342475807	8.792064279
5	1.00	-5.505427580	7.278496484	9.126129733
6	1.00	7.607646697	19.124468721	20.582069675
7	1.00	1.936959281	-11.691800690	11.851160898
8	1.00	-2.834445248	-8.953958160	9.391881952
9	1.00	-8.585596244	4.876261763	9.873722280
10	1.00	4.637563426	5.378159508	7.101520558
11	1.00	8.599692800	-12.144931703	14.881333352
12	1.00	1.182007866	-4.483250976	4.636451435

Residuals (Sum) - X : -2.625165507E-08 Y : -1.862645149E-08

Residuals (Sum of Squares - X & Y) : 1574.040141472

Scaling - X : 1.250257 Y : 1.250349

Translation - X : 338898.447172 Y : 7114096.609280

Rotation - 0.351557 degrees

Non-orthogonality - -0.004027 degrees

End of report. Checked :..... .../.../...

4. The Working Database Structure

The following table lists every working database feature code, their associated feature type and their attributes. The attributes are listed in the order required for the working database.

Note: Some feature classes have attributes which are not relevant to the feature because they share the attribute table with other features in the cover. Where attributes are not relevant they will be null if of character type and 0 if numeric. Only attributes relevant to the feature class are listed in this table and the feature class dictionary, see Appendix A.

How to read this table:

ID: **cover letter code**
COVER: **cover name**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
type of spatial object	the feature class	feature code	attribute code (see Appendix A Feature Class Dictionary) **bold** = relevant to GEODATA *italic* = relevant to map but not GEODATA [In square brackets] = relevant to working database only (In round brackets) = relevant to the specific scale mentioned

ID: **a**
COVER: **aeronautical point**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Arc (100K only)	Taxiway	taxiway	**q_info,** *symbol*
Point	Aircraft facility	aircrft_flty	**name, facility, q_info, ufi (250K only),** *symbol, feat_wid*, *orientation, text_note (100Konly),* [old_ufi] (250K only)

ID: **b**
COVER: **built-up areas**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Polygon	Built-up area	builtup_a	**name, q_info, ufi (250K only),** *symbol,* [old_ufi] (250K only)
	Built-up area void	bua_void	**q_info, ufi (250K only),** *symbol,* [old_ufi] (250K only)
	Park	park	**name, park, q_info, ufi (250K only),** *symbol, text_note*
	Cemetery	cemetery	**name, q_info, ufi (250K only),** *symbol, text_note*
	Rubbish tip	Tip (100K only)	**q_info,** *symbol, text_note*
Arc	Built-up area line	builtup_l	**q_info, ufi (250K only),** *symbol,* [old_ufi] (250K only)
	Tile edge	tile_edge	**q_info, ufi (250K only),** *symbol*

ID: **c**
COVER: **contours**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Polygon	Hypsometric area	hypso_a	**elevation, q_info, ufi (250K only),** *symbol*
Arc	Contour	contour	**elevation, contour, q_info, ufi (250K only),** *symbol*
	Tile edge	tile_edge	**q_info, ufi (250K only),** *symbol*

ID: **d**
COVER: **drainage**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Arc	Canal	canal	**name, q_info, ufi (250K only),** *symbol, text_note,* [old_ufi] (250K only)
	Connector	connector	**name, perennial, hierarchy, q_info, ufi (250K only),** *symbol,* [old_ufi] (250K only)
	Watercourse	watercours_l	**name, perennial, hierarchy, q_info, ufi (250K only),** *symbol, text_note,* [old_ufi] (250K only)
	Rapid	rapid_l	**name, perennial, hierarchy, q_info, ufi (250K only),** *symbol, text_note*
	Spillway	spillway	**name, perennial, hierarchy, q_info, ufi (250K only),** *symbol, text_note*
Point	Waterfall	fall_p	**name, q_info, ufi (250K only),** *symbol, feat_wid, orientation, text_note*
	Lock	lock	**name, q_info, ufi (250K only),** *symbol, feat_wid, orientation, text_note*
	Waterhole	waterhole	**name, perennial, q_info, ufi (250K only),** *symbol, feat_wid, orientation, text_note*

ID: **e**
COVER: **spot heights**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Point	Spot elevation	spot_elevatn	**elevation, source, point, q_info, ufi (250K only),** *symbol, feat_wid, orientation,* [old_ufi] (250K only)

ID: **f**
COVER: **framework**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Polygon	Island	island	**name, state, q_info, ufi (250K only),** *symbol,* [old_ufi] (250K only)
	Sea	sea	**name, q_info, ufi (250K only),** *symbol,* [old_ufi] (250K only)
	Mainland	mainland	**state, q_info, ufi (250K only),** *symbol,* [old_ufi] (250K only)
Arc	Tile edge	tile_edge	**q_info, ufi (250K only),** *symbol,* [old_ufi] (250K only)
	Junction	junction	**q_info, ufi (250K only),** *symbol,* [old_ufi] (250K only)
	State border	state_border	**q_info, ufi (250K only),** *symbol,* [old_ufi] (250K only)
	Sea wall	sea_wall	**q_info, ufi (250K only),** *symbol, text_note*
	Waterline	waterline	**q_info, ufi (250K only),** *symbol,* [old_ufi] (250K only)

ID: **g**
COVER: **buildings point**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Point	Building	building	**building, function (100K only), q_info, ufi (250K only),** *symbol, feat_wid, orientation, text_note*

ID: **h**
COVER: **marine facilities**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Arc	Breakwater	breakwater	**q_info, ufi (250K only),** *symbol, text_note*
	Wharf	wharf	**q_info, ufi (250K only),** *symbol, text_note*
	Jetty	jetty	**q_info, ufi (250K only),** *symbol, text_note*
	Boat ramp	boat_ramp	**q_info,** *symbol, text_note*

ID: **i**
COVER: **cultural area**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Polygon	Building	building_a	**building (100K only), function (100K only), q_info (100K only),** *symbol, text_note,* [building] (250K only)
	Landmark Area	landmark_a (100K only)	**name, description, q_info,** *symbol, text_note*
Arc	Building line	building_l (250K only)	*symbol*
	Cultural Area Line	cultural_a_l (100K only)	**q_info,** *symbol*
	Tile edge	tile_edge	**q_info (100K only),** *symbol*

ID: **j**
COVER: **vegetation miscellaneous**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Arc	Windbreak	windbreak	**q_info, ufi (250K only),** *symbol*

ID: **k**
COVER: **powerlines**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Arc	Powerline	powerline	**q_info, ufi (250K only),** *symbol*

ID: **l**
COVER: **localities**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Point	Locality	locality	**name, locality, q_info, ufi (250K only),** *symbol, feat_wid, orientation, text_note,* [old_ufi] (250K only)

ID: **m**
COVER: **morphology**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Arc	Cliff	cliff	**q_info, ufi (250K only),** *symbol, text_note*
	Razorback	Razorback (100K only)	**q_info,** *symbol, text_note*
	Levee	levee	**q_info, ufi (250K only),** *symbol*
	Cutting	cutting	**q_info, ufi (250K only),** *symbol*
	Embankment	embankment	**q_info, ufi (250K only),** *symbol*
Point	Pinnacle	pinnacle	**q_info, ufi (250K only),** *name, symbol, feat_wid, orientation, text_note*
	Cave	cave	**q_info, ufi (250K only),** *name, symbol, feat_wid, orientation, text_note*

ID: **n**
COVER: **navigation**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Point	Lighthouse	lighthouse	**name, q_info, ufi (250K only),** *symbol, feat_wid, orientation, text_note*
	Wreck	wreck	**name, relationship, q_info, ufi (250K only),** *symbol, feat_wid, orientation, text_note*
	Offshore rock	rock_offshor	**name, relationship, q_info, ufi (250K only),** *symbol, feat_wid, orientation, text_note*

ID: **o**
COVER: **offshore**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Polygon	Foreshore flat	forshor_flat	**q_info, ufi (250K only),** *symbol,* [old_ufi] (250K only)
	Offshore void	offshor_void	**q_info, ufi (250K only),** *symbol,* [old_ufi] (250K only)
	Reef	reef	**name, relationship, reef, q_info, ufi (250K only),** *symbol, text_note*
Arc	Offshore line	offshor_l	**q_info, ufi (250K only),** *symbol,* [old_ufi] (250K only)
	Tile edge	tile_edge	**q_info, ufi (250K only),** *symbol*

ID: **p**
COVER: **pipelines**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Arc	Pipeline	pipeline	**product, relationship, q_info, ufi (250K only),** *name, symbol, text_note*

ID: **q**
COVER: **relief area**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Polygon	Rocky outcrop	rocky_a	**q_info, ufi (250K only),** *symbol, text_note*
	Distorted surface	dist_surf	**q_info, ufi (250K only),** *symbol, text_note*
	Sand	sand	**q_info, ufi (250K only),** *symbol*
	Crater	crater	**q_info, ufi (250K only),** *name, symbol, text_note*
	Open Cut/mining area	open_cut	**q_info, ufi (250K only),** *name, symbol, text_note*
	Sand dunes	dunes	**q_info, ufi (250K only),** *symbol*
	Relief area void	rel_a_void	**q_info, ufi (250K only),** *symbol*
Arc	Relief area line	rel_area_l	**q_info, ufi (250K only),** *symbol*
	Tile edge	tile_edge	**q_info, ufi (250K only),** *symbol*

ID: **r**
COVER: **rail transport**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Arc	Railway	railway	**name, tracks, status, gauge, q_info, ufi (250K only),** *symbol, text_note,* [old_ufi] (250K only)
	Railway bridge	bridge_rl_l	**name, tracks, status, gauge, q_info, ufi (250K only),** *symbol, feat_wid, text_note,* [old_ufi] (250K only)
	Railway tunnel	tunnel_rl_l	**name, tracks, status, gauge, q_info, ufi (250K only),** *symbol, text_note,* [old_ufi] (250K only)
	Railway causeway	causeway_rl	**name, tracks, status, gauge, q_info, ufi (250K only),** *symbol, feat_wid, text_note*
	Railway overpass	overpass_rl (100K only)	**name, tracks, status, gauge, q_info,** *symbol, feat_wid, text_note,*
Point	Railway bridge	bridge_rl_p	**name, tracks, status, gauge, q_info, ufi (250K only),** *symbol, feat_wid, orientation, text_note,* [old_ufi] (250K only)
	Railway tunnel	tunnel_rl_p	**name, tracks, status, gauge, q_info, ufi (250K only),** *symbol, feat_wid, orientation, text_note,* [old_ufi] (250K only)
	Railway station	rail_station	**name, q_info, ufi (250K only),** *symbol, feat_wid, orientation, text_note,* [old_ufi] (250K only)

ID: **s**
COVER: **sand ridges**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Arc	Sand ridge	sand_ridge	**average_height, q_info, ufi (250K only),** *symbol*

ID: **t**
COVER: **vegetation**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Polygon	Woody Vegetation	forest	**coverdensity (100K only), growthform (100Konly), q_info, ufi (250K only),** *symbol*
	Rainforest	rainforest	**q_info, ufi (250K only),** *symbol, text_note*
	Plantation	plantation	**type (100k only), q_info, ufi (250K only),** *symbol, text_note*
	Orchard or Vineyard	orchard	**type (100k only), q_info, ufi (250K only),** *symbol, text_note*
	Mangrove	mangrove	**q_info, ufi (250K only),** *symbol, text_note*
	Vegetation Void	veg_void	**q_info, ufi (250K only),** *symbol*
Arc	Vegetation Line	veg_l	**q_info, ufi (250K only),** *symbol*
	Tile edge	tile_edge	**q_info, ufi (250K only),** *symbol*

ID: **u**
COVER: **utilities**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Arc	Fence	fence	**q_info, ufi (250K only),** *symbol, text_note*
	Dam	dam	**name, q_info, ufi (250K only),** *symbol, text_note*
	Aerial cableway	chairlift	**name, q_info, ufi (250K only),** *symbol, text_note*
	Conveyor	conveyor	**q_info, ufi (250K only),** *symbol, text_note*
Point	Gas well	gas_well	**q_info, ufi (250K only),** *symbol, feat_wid, orientation, text_note*
	Storage tank	stor_tank_p	**q_info, ufi (250K only),** *symbol, feat_wid, orientation, text_note*
	Yard	yard	**q_info, ufi (250K only),** *symbol, feat_wid, orientation, text_note*
	Mine	mine	**name, q_info, ufi (250K only),** *symbol, feat_wid, orientation, text_note*
	Landmark Point	landmark_p	**description, q_info, ufi (250K only),** *height, symbol, feat_wid, orientation, text_note*
	Dry dock	dry_dock (100K only)	**name, q_info,** *symbol, feat_wid, orientation, text_note*

ID: **v**
COVER: **road transport**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Arc	Road	road	**name, class, formation, nrn, srn, q_info, ufi (250K only),** *symbol, feat_wid, text_note,* [old_ufi] (250K only)
	Road bridge	bridge_rd_l	**name, class, formation, nrn, srn, q_info, ufi (250K only),** *symbol, feat_wid, text_note,* [old_ufi] (250K only)

	Road tunnel	tunnel_rd_l	**name, class, formation, nrn, srn, q_info, ufi (250K only),** *symbol, text_note,* [old_ufi] (250K only)
	Ferry route	ferry_route	**name, q_info, ufi (250K only),** *symbol, text_note,* [old_ufi] (250K only)
	Foot track	foot_track	**name, q_info, ufi (250K only),** *symbol, text_note*
	Foot bridge	foot_bridge (100K only)	**name, q_info,** *symbol*
	Road causeway	causeway_rd	**name, class, formation, nrn, srn, q_info, ufi (250K only),** *symbol, feat_wid, text_note*
	Road on dam	road_on_dam	**name, class, formation, nrn, srn, q_info, ufi (250K only),** *symbol, feat_wid, text_note*
	Road overpass	overpass_rd (100K only)	**name, class, formation, nrn, srn, q_info,** *symbol, feat_wid, text_note,*
	Ford	ford_l	**name, class, formation, nrn, srn, q_info, ufi (250K only),** *symbol, text_note*
Point	Road bridge	bridge_rd_p	**name, class, formation, nrn, srn, q_info, ufi (250K only),** *symbol, feat_wid, orientation, text_note,* [old_ufi] (250K only)
	Road tunnel	tunnel_rd_p	**name, class, formation, nrn, srn, q_info, ufi (250K only),** *symbol, feat_wid, orientation, text_note,* [old_ufi] (250K only)
	Gate	gate	**q_info, ufi (250K only),** *symbol, feat_wid, orientation, text_note*
	Stock grid	grid	**q_info, ufi (250K only),** *symbol, feat_wid, orientation*
	Ford	ford_p	**name, class, formation, nrn, srn, q_info, ufi (250K only),** *symbol, feat_wid, orientation, text_note*

ID: **w**
COVER: **waterbodies**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Polygon	Lake	lake	**name, perennial, q_info, ufi (250K only),** *symbol, text_note,* [old_ufi] (250K only)
	Land subject to inundation	sub_to_inund	**name, q_info, ufi (250K only),** *symbol,* [old_ufi] (250K only)
	Mangrove flat	mangrove_flt (250K only)	**q_info, ufi,** *symbol,* [old_ufi]
	Reservoir	reservoir	**name, q_info, ufi (250K only),** *symbol, text_note*, [old_ufi] (250K only)
	Saline coastal flat	saln_cst_flt	**q_info, ufi (250K only),** *symbol, text_note* [old_ufi] (250K only)
	Swamp	swamp	**name, q_info, ufi (250K only),** *symbol, text_note,* [old_ufi] (250K only)
	Watercourse	watercours_a	**name, perennial, hierarchy, q_info, ufi (250K only),** *symbol, text_note,* [old_ufi] (250K only)
	Water body void	w_body_void	**q_info, ufi (250K only),** *symbol,* [old_ufi] (250K only)
	Rapid	rapid_a	**name, perennial, hierarchy, q_info, ufi (250K only),** *symbol, text_note*
	Marine swamp	swamp_marine	**q_info, ufi (250K only),** *symbol, text_note*
	Salt evaporator	salt_evapor	**q_info, ufi (250K only),** *symbol, text_note*
	Settling ponds	sew_pond	**q_info, ufi (250K only),** *symbol, text_note*
	Canal	canal_a	**name, q_info, ufi (250K only),** *symbol, text_note*
Arc	Junction	junction	**q_info, ufi (250K only),** *symbol,* [old_ufi] (250K only)

	Waterline	waterline	**q_info, ufi (250K only),** *symbol,* [old_ufi] (250K only)
	Rapid area line	rapid_a_l	**q_info, ufi (250K only),** *symbol*
	Tile edge	tile_edge	**q_info, ufi (250K only),** *symbol*

ID: **x**
COVER: **waterpoints**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Point	Spring	spring	**name (100K only), q_info, ufi (250K only),** *name* (250K only), *symbol, feat_wid, orientation, text_note*
	Water tank	tank_dam_p	**name (100K only), q_info, ufi (250K only),** *name* (250K only), *symbol, feat_wid, orientation, text_note*
	Bore	bore	**name (100K only), q_info, ufi (250K only),** *name* (250K only), *symbol, feat_wid, orientation, text_note*
	Windpump	windpump	**name (100K only), q_info, ufi (250K only),** *name* (250K only), *symbol, feat_wid, orientation, text_note*
	Waterpoint	waterpoint	**name (100K only), waterpoint, q_info, ufi (250K only),** *name_*(250K only) , *symbol, feat_wid, orientation, text_note*

ID: **y**
COVER: **survey marks**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Point	Horizontal control point	trig_station	**elevation, code, q_info, ufi (250K only),** *name, symbol, feat_wid, orientation, text_note*, [order]
	Bench mark	bench_mark (250K only)	**elevation, code, q_info, ufi (250K only),** *symbol, feat_wid, orientation, text_note*

ID: **z**
COVER: **aeronautical area (100K only)**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Polygon	Aircraft facility	aircrft_flt_a	**name, facility, q_info,** *symbol*
	Airport	airport_a	**q_info,** *symbol*
	Aircraft facility void	airc_f_void	**q_info,** *symbol*
Arc	Aircraft facility line	aircrft_f_l	**q_info,** *symbol*
	Tile edge	tile_edge	**q_info,** *symbol*

ID: **1**
COVER: **security areas**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Polygon	Prohibited area	proh_a	**name, authority, q_info, ufi (250K only),** *symbol*
	Prohibited area void	proh_a_void	**q_info, ufi (250K only),** *symbol*
Arc	Prohibited area line	proh_a_l	**q_info, ufi (250K only),** *symbol, feat_wid, text_note (100K only)*

	Tile edge	tile_edge	**q_info, ufi (250K only),** *symbol*

ID: **2**
COVER: **auxiliary contours (100K only)**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Arc	Auxiliary Contour	auxil_cont	**elevation, contour, q_info,** *symbol*

ID: **3**
COVER: **reserved areas**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Polygon	Reserve - Indigenous area	abor_res	**name, authority, q_info, ufi (250K only),** *symbol*
	Reserve - Forestry	forest_res	**name, authority, q_info, ufi (250K only),** *symbol*
	Reserve - Nature conservation	nat_res	**name, authority, q_info, ufi (250K only),** *symbol*
	Reserve - Water supply	water_res	**name, authority, q_info, ufi (250K only),** *symbol*
	Reserve void	res_a_void	**q_info, ufi (250K only),** *symbol*
Arc	Reserve line	res_a_l	**q_info, ufi (250K only),** *symbol, feat_wid, text_note (100K only)*
	Tile edge	tile_edge	**q_info, ufi (250K only),** *symbol*

ID: **4**
COVER: **seismic lines**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Arc	Seismic line	seismic_l	**q_info, ufi (250K only),** *symbol, text_note*

ID: **5**
COVER: **cartographic features**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Arc	Boundary - International	internat_l	*symbol, text_note*
	Lock Line	lock_l (100K only)	*symbol*
	Salt evaporator internal line	salt_ev_i_l	*symbol*
	Settling pond internal line	sew_pond_i_l	*symbol*
	Runway centreline	runway_c_l	*symbol*
	Tropic of Capricorn	tropic_cap	*symbol, text_note*
	Feature pointer	pointer	*symbol*

	Road destination arrow	arrow_dest	*symbol, text_note*
Point	Transition point	transition_p	*symbol, feat_wid, orientation*
	Route marker - National	route_nat	*symbol, feat_wid, orientation, text_note*
	Route marker - State	route_state	*symbol, feat_wid, orientation, text_note*
	Kilometric distance indicator	distance_ind	*symbol, feat_wid, orientation*
	Powerline pylon symbol	Pylon (250K only)	*symbol, feat_wid, orientation*
	Flow Direction Arrow	flow_direct (100K only)	*symbol, orientation*
Annotation		-	*$SIZE, $TEXT, $JUSTIFY, $OFFSETX, $OFFSETY, $SYMBOL, $ALIGN, $FIT, $WORD, $ID, $LEVEL, $RECNO*

ID: **6**
COVER: **map grid**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Arc	Grid line	grid_map	*symbol*
Annotation		-	*$SIZE, $TEXT, $JUSTIFY, $OFFSETX, $OFFSETY, $SYMBOL, $ALIGN, $FIT, $WORD, $ID, $LEVEL, $RECNO*

ID: **7**
COVER: **graticule**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Arc	Graticule line	graticule	*symbol*
Annotation		-	*$SIZE, $TEXT, $JUSTIFY, $OFFSETX, $OFFSETY, $SYMBOL, $ALIGN, $FIT, $WORD, $ID, $LEVEL, $RECNO*

ID: **8**
COVER: **map boundary**

OBJECT	FEATURE CLASS	FEAT_CODE	ATTRIBUTES
Polygon	Map area	map_area	
Arc	Map mask	map_mask	

5. General Notes

5.1 Database Extents

The working database for a standard 1:250 000 sheet area will extend 4' to the north and 6' to the east beyond the standard area. For a standard 1:100 000 it will extend north and east to take into account the AGD66/GDA94 datum shift, however initially many 1:100 000s will not be based on standard boundaries, boundaries defined in the project files

supplied will take precedence over any stated boundaries in these specifications. The relationship between GEODATA tile extents, map extents and the working database extents is outlined in Appendix H together with a complete list of adjusted sheet extents.

5.2 Annotation and Paper Trimming

Annotation will be placed in the working database such that it will not be clipped when the printed map is trimmed.

At 1:250 000 annotation will not extend past the 3' and 5' bleed edge limits, ie. not extend within 1' of the northern and eastern working database extents. Particular care should be taken to allow for the 'tilt' of the sheet. For example, trimming a sheet on the western edge of a UTM zone will cause a Bleed Edge of less than 5' at the south east corner.

At 1:100 000 no annotation should be contained within the bleed/map overhang.

5.3 Cartographic Generalisation, Selection and Overlap

The working database is a cartographically generalised database. Features in the working database will often be displaced from their true position on the ground and their position as shown in satellite imagery. Only in extreme cases should existing features in the working database be moved so as to better match their position on satellite imagery. Any discrepancy equal to or more than 200 metres at 1:250 000 and 80m at 1:100 000 between where a feature is shown in the existing data and as shown on imagery would constitute an extreme case. When adding new features to or editing existing features in the working database the cartographic generalisation should be maintained. For instance, new roads may have to be displaced so that they do not plot over the top of railways.

Selection of features may also be affected by the need for cartographic generalisation. The feature class dictionary in Appendix A gives minimum criteria for inclusion of features. However, in some areas the density of detail will result in features which meet the minimum criteria for selection being omitted to prevent clutter. The need for such selections will be the exception rather than the rule. When such selections must be made, the aim will be to preserve the essential character of the terrain the map portrays. Priority should be given to features with high landmark value and to ensuring the connectivity of transport features. For example, major roads would take precedence over vehicle tracks or minor watercourses.

Where an existing working database overlaps a new tile, the data for the area of overlap must be identical spatially and in all attributes except Unique Feature Identifier (UFI).

The exceptions to this rule are:

- temporal changes in features since the earlier data was produced
- errors in the data structure (see Appendix J chapter 2.1.2 Logical Consistency)
- Annotation features, however, Section 2 chapter 5.3 rule 14 should be noted
- the highest spot elevation on the new tile or the highest spot elevation on the map
- changes in the selection rules as set out in Appendix A Feature Class dictionary, Horizontal control points.
- changes in symbolisation of watercourse between symbols 92 and 922 and between symbols 940 and 942 (see Appendix A chapter 6 – Symbol Dictionary) at 1:250 000.

- differences between versions of the specification (see Section 3, chapter 7.2)

Apparent errors in attributes in areas of overlap or difficulties in identifying features where they extend beyond the area of overlap should be referred to Geoscience Australia.

When selecting features close to the edge of the maps attention should be paid to their representation on the adjacent maps. It may be necessary to exclude features if only a short segment appears on the map, the surrounding maps do not include the feature and the feature can not be captured from other source material. Such exclusions should be documented on the project file.

5.4 The Use of Satellite Imagery

As a general rule a feature should not be captured solely from satellite imagery. Satellite imagery is generally used to position new features, and other information is used to verify existence and attribute the features. Guidelines for the use of satellite imagery will be issued to producers so that its use will be consistent.

5.5 Priorities in Use of References, Map and Imagery

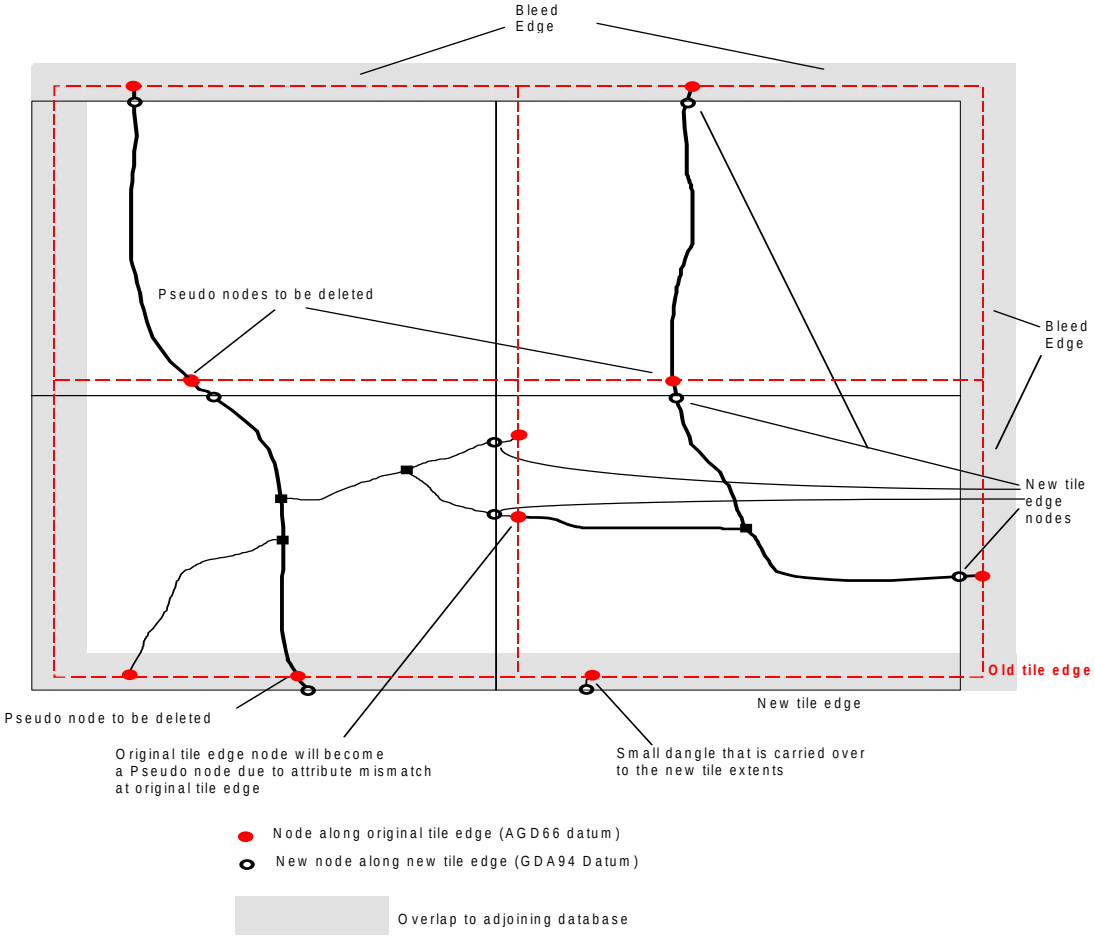
As listed in chapter 3.2, Source Material and Information Supplied by Geoscience Australia, information for revision of the existing maps is drawn from a wide range of sources. Appendix A, Feature Class Dictionary includes specific rules for the use of some sources. Supplementary guidelines for resolving conflicts between sources will be issued to producers so that use of sources will be consistent.

5.6 Datum Shift

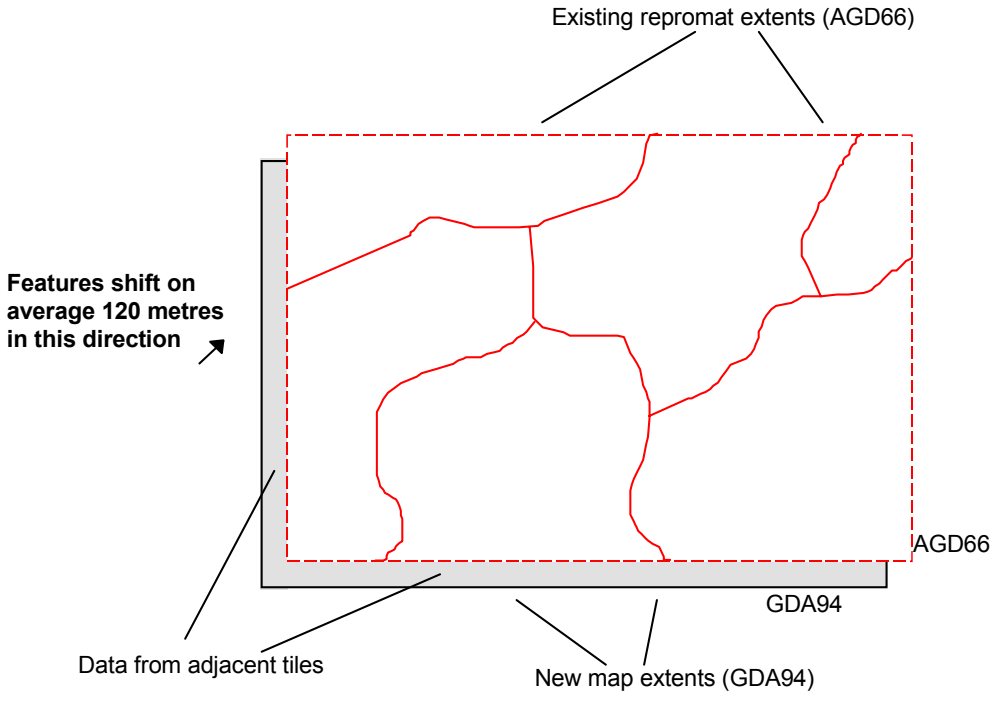
TOPO–250K Series 1 data, which may be supplied to revise spot elevations, is in the AGD66 datum. In addition, some revision information may be supplied to producers in paper, repromat or digital form situated on the AGD66 datum. It would be unusual for producers to be supplied digital data in AGD66 but if this does occur the tape will be labelled as such. Producers need to be aware of the source datum and projection of all information supplied.

Any information in AGD66 will need to be shifted into the GDA94 datum before merging/inclusion into the new 250K Series 2 or 100K Series 1 products.

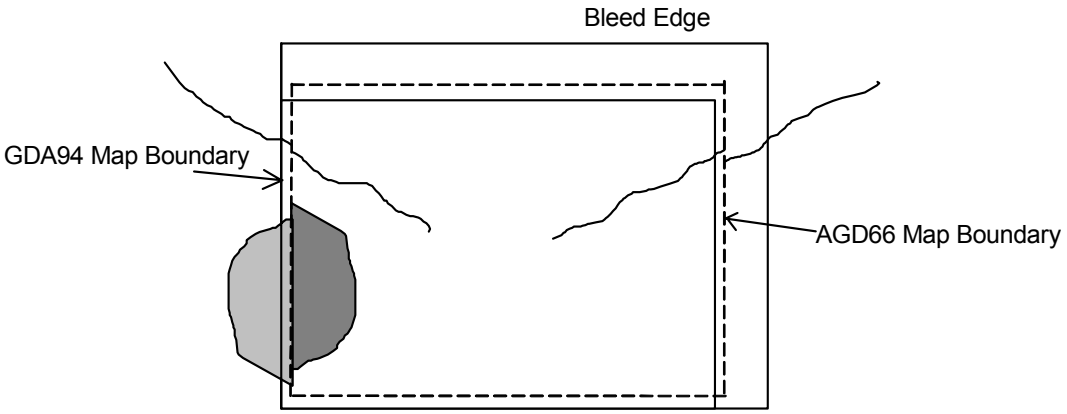
The following diagrams illustrate the effect of the datum shift on the position of the tile edges and the features that cross those tile edges. Additional information on GDA94 can be found in Appendix M.



Where data is digitised from repromat or generated from AGD 66 source material, data from the adjacent tiles to the south and west will need to be included to allow for the datum shift. This is illustrated by the diagram below:

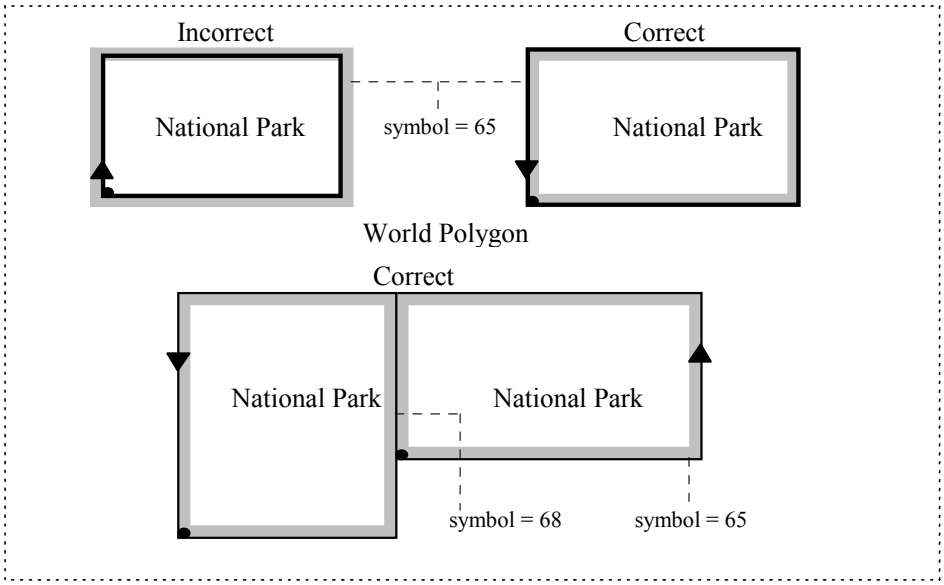


Graphical mismatches that were not resolved within source material/data will also manifest themselves within the new tile boundaries as shown below. These mismatches become internal to the tile when in the new datum, and must be resolved.



5.7 Direction of Digitising

For some features, such as cliff, embankment, and reserve line, the direction of digitising is important. For reserve line the direction of digitising will be anti-clockwise, as shown in the following diagram. This will place the verge of the symbol on the correct side of the digitised line.



Where direction of digitising is used in symbology it is noted in the feature class dictionary, see Appendix A.

5.8 Feature Width Attribute

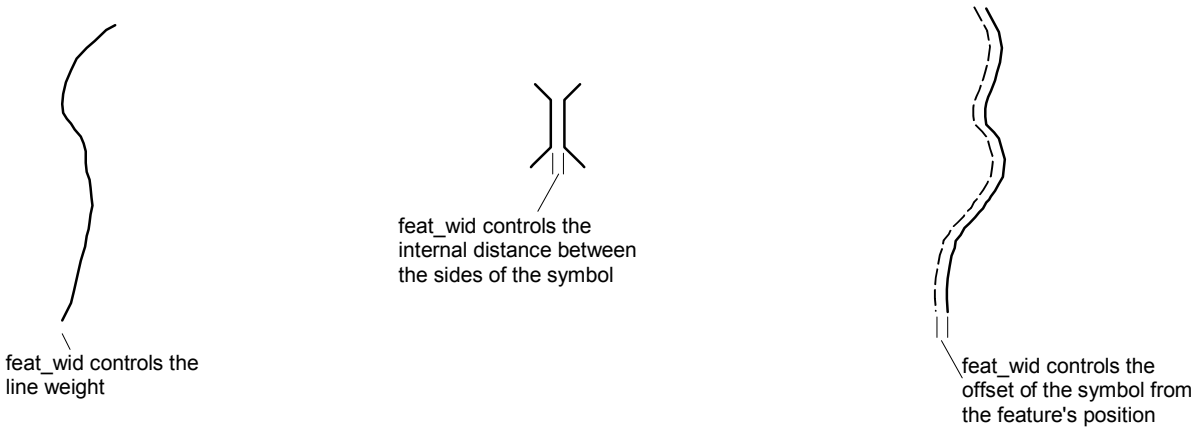
The feature width attribute (feat_wid) may be used to control three aspects of symbology:

- The width of a symbol, where the attribute controls the line weight of the symbol, for example, the line weight of roads under construction.

- The internal gap between two sides of a symbol, where the attribute controls the distance between two elements of a symbol, for example the distance between the two sides of a bridge to accommodate road symbols of varying width.

- The offset of a symbol from the feature's position where the attribute controls the distance a symbol is displaced from the feature's location. For example, a reserve boundary may be coincident with a road but the symbology will be displaced to allow for the width of the road symbol. The direction of digitising dictates the direction the symbol is offset. The symbol will move to the left when viewed from start node to end node.

Examples

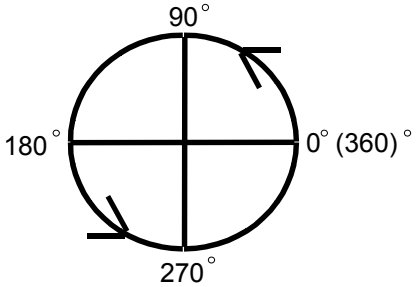


Symbol width *Internal distance* *Symbol offset*

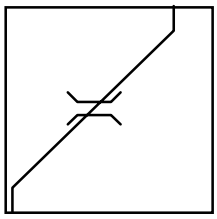
The usage of the feature width attribute for particular features is given in the feature class dictionary, Appendix A.

5.9 Orientation Attribute

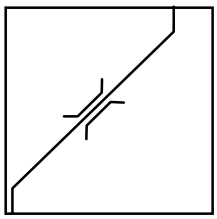
The angle of orientation is anti-clockwise and as illustrated on the following diagram. The axis of oriented symbols is shown in the symbol dictionary, Appendix A.



The following diagram illustrates the effect of orientation on the plotting of a bridge symbol.



Orientation = 0



Orientation = 49

5.10 Type, Name and Text Note Attributes and Annotation Features

All type displayed on the face of the map will be stored as annotation features. Where the type relates to an entity feature, the $text attribute of the annotation feature must be consistent with the data stored in the relevant attributes of the entity. For example, description, height and text_note attributes are all relevant attributes for a Landmark Point tower. Note: that the text that appears on the face of the map may be a combination of several attributes in the working database.

Annotation should not exist on the map face that is not associated with a feature contained within the digital data except where that annotation is a general descriptor of the area (e.g. 'numerous bores and wells').

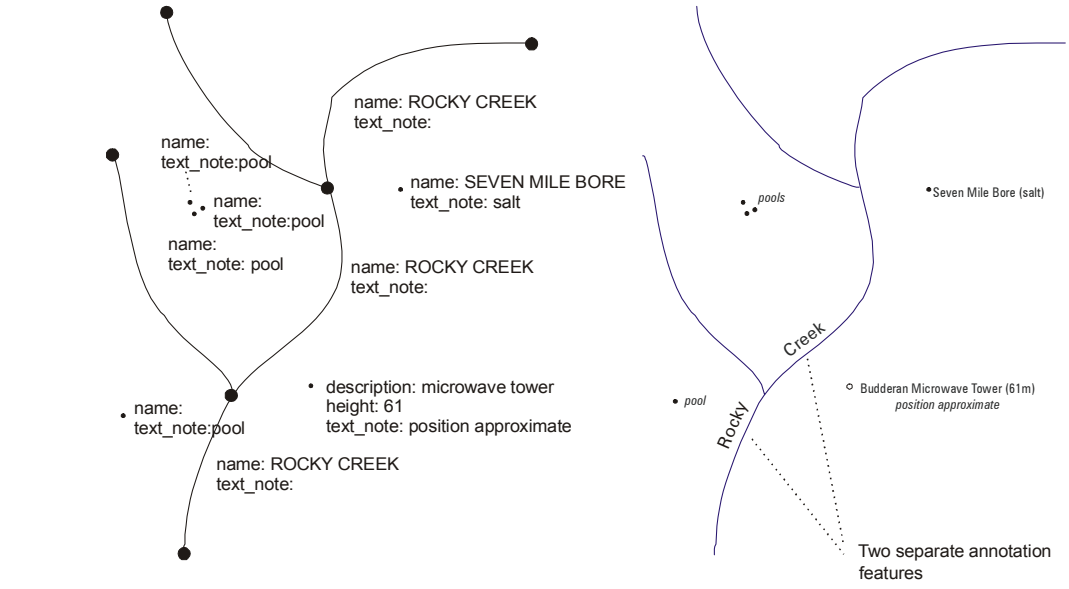
Annotation should not exist on the map face when its associated feature is not symbolised (note: Polygons may be symbolised/represented by a shading, by their boundary line or a combination of both). The following exceptions exist for this rule:

- Waterfalls
- Localities(non-printing)
- Airports
- Fords
- Grid Lines (when follows the central meridian)
- Offshore rocks (in close proximity to lighthouses)
- Pipelines (non printing when adjacent to another pipeline)
- Fences (non printing where follows state border or road)
- Dams (when coincident with roads)

The name attribute is used to store the name for GEODATA. The name must be stored against each spatial object making up the entity, for example, each chain along the course of a river.

The text_note attribute is purely a working database attribute. It is intended to allow a linkage to be established between the attributes stored in the working database and the related annotation features. A text_note need only occur in the working database the number of times the feature label appears on the map. The text_note field will not duplicate text in other data attribute fields. Where the Map rules in Appendix A, Feature Class Dictionary, require or allow the naming of a feature and there is no name field the name will be held in the text_note field. One text_note or name may be divided between two or more annotation features.

Examples



Data Base (excluding Annotation) *Map (type from annotation)*

Name attributes will be in upper case. Text_note and $text attributes will be in the case in which they appear on the map. Parentheses will not be included in text notes. In the case of Landmark Point features where the height is shown on the face of the map the abbreviation for metres ('m') will not be included in either the height or text_note attributes.

All annotation will be held in the cartographic features cover, except for annotation for the grid values and 100 000 metre identification letters which will be in the map grid cover and for graticule values which will be held in the graticule cover. All grid values, including those outside the neat line will be included in the grid cover. All graticule values, including those outside the neat line will be included in the graticule cover.

The $SYMBOL attribute will be assigned to match the type specifications in Section 2 chapter 8 (1:250 000 Scale Type Specifications) and 9 (1:100 000 Scale Type Specifications). The symbol numbers used are:

$SYMBOL number	Type style	Colour
6	Zurich	Black
7	Zurich Italic	Black
8	Zurich Bold	Black
9	Zurich Bold Italic	Black
10	Zurich Condensed	Black
11	Zurich Condensed Italic	Black
26	Zurich	Red
27	Zurich Italic	Red
28	Zurich Bold	Red
29	Zurich Bold Italic	Red

$SYMBOL number	Type style	Colour
30	Zurich Condensed	Red
31	Zurich Condensed Italic	Red
36	Zurich	Blue
37	Zurich Italic	Blue
38	Zurich Bold	Blue
39	Zurich Bold Italic	Blue
40	Zurich Condensed	Blue
41	Zurich Condensed Italic	Blue
50	Stymie Medium	Black

5.11 Spatial Coincidence

The spatial object for some feature classes have a physical or assumed link to the spatial objects of other feature classes in the database. There are four types of linkages:

- Cloned features
- Coincident features
- Node on Chord
- Vertex on Chord

5.11.1 Cloned features

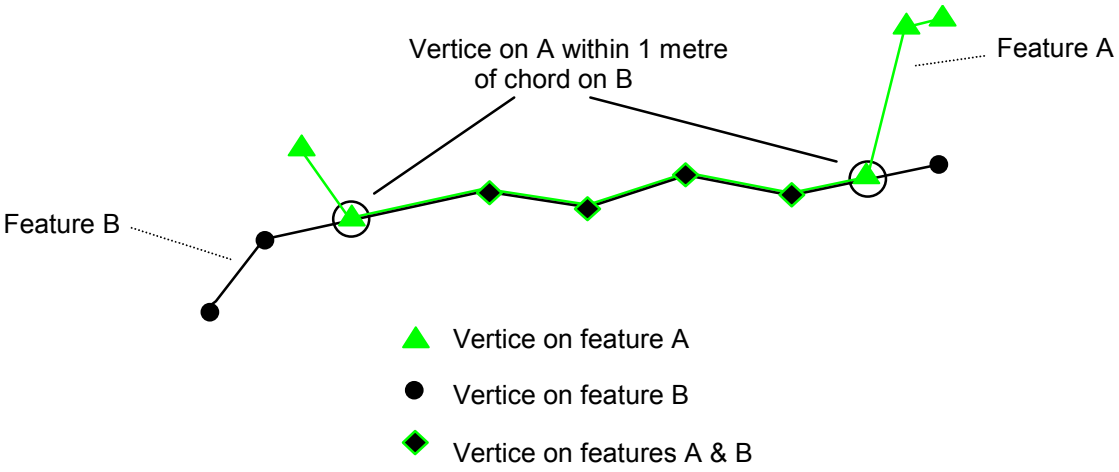
A feature is cloned when it's spatial attributes are to be exactly the same as those of another feature. Cloned features are of the same feature type, that is, a line will be cloned to a line, a point to a point. The following table lists some clone relationships. The data rules sections of the feature class dictionary indicate where a feature is cloned from another, see Appendix A.

ORIGINAL FEATURE	CLONE OF ORIGINAL
locality coded homestead	building (point)
vegetation line (bounding mangrove)	waterline (bounding mangrove flat)

5.11.2 Coincident Features

Features are coincident when they share one or more coordinate pairs. For example, a point feature may need to be coincident with a linear feature or two linear features may be coincident sharing a number of points. Point features may need to be coincident with a node rather than a vertice, for example a Railway station needs to be coincident with a node on the railway line. Where linear features are coincident one line may leave the other part way down a chord. However, at the point where one deviates from the other the vertice must be within 1 metre of the chord in both geographical and MGA coordinates.

Example



When point features are required to be coincident with a node in a line feature they must have exactly the same coordinates as the node in the line feature.

The following table lists some of these point-over-node coincidence relationships. The data rules sections of the feature class dictionary give a more complete listing of relationships - see Appendix A.

LINEAR FEATURE WITH NODE	POINT FEATURE
connector	lock
railway	railway station, rail bridge (point), rail tunnel (point)
road	road bridge (point), road tunnel (point), ford (point), gate
road	locality (populated place, road junction)
watercourse	waterhole, waterfall
road, railway	transition point

The following table lists some of the linear feature to linear feature relationships. The data rules sections of the feature class dictionary give a more complete listing of coincidence relationships, see Appendix A. Where a feature in the right column of the table falls within 50 metres of a feature at 1:250 000 scale and 20 metres at 1:100 000 scale in the left column, then it should be made coincident with the feature in the left column.

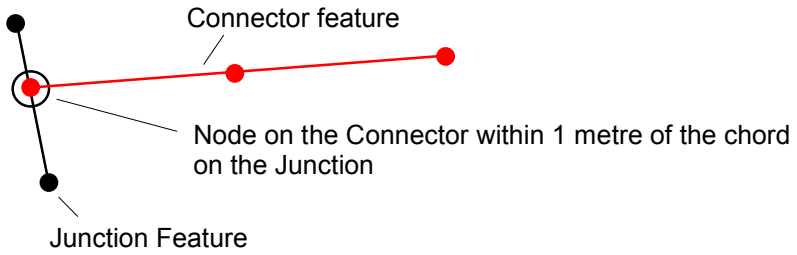
ORIGINAL FEATURE	COINCIDENT FEATURE
tile edge (in the framework layer)	tile edge (in any other layer)
0waterline, sea wall, offshore line, road, railway, prohibited area line, reserve area line	built-up line
waterline (in the framework layer)	waterline (bounding saline coastal flat)

ORIGINAL FEATURE	COINCIDENT FEATURE
waterline (in the framework layer)	waterline (bounding mangrove flat)
waterline (bounding sea, estuarine lakes or estuarine watercourse areas)	offshore line
building area line, offshore line, relief area line (bounding open cut, sand or dunes), waterline (bounding reservoir, settling pond, salt evaporator, lake, watercourse area perennial, and defining the coastline), sea wall, aircraft facility line	vegetation line
waterline (in the framework layer)	wharf

5.11.3 Node of Line Feature on Chord of another Line Feature

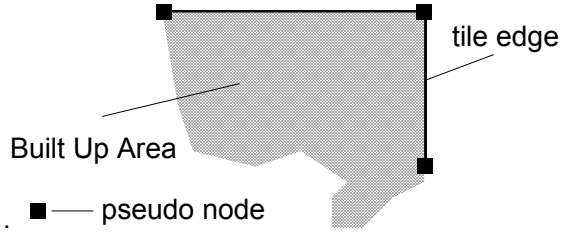
In the working database some features are required to end exactly on another. For instance, connectors are often required to end on a junction feature, even though the junction feature resides in a different layer. When one feature is required to end on another feature the coordinates of its end node are required to be exactly the same as the coordinates of a vertice in the cross feature, or to be within one metre in both geographical and MGA coordinates of a chord in the cross feature.

The following diagram illustrates this relationship. The data rules sections of the feature class dictionary give a more complete listing of these relationships, see Appendix A.



5.12 Nodes and Vertices on the Tile Edge

Where the tile edge forms a polygon boundary it is important that a node is present where the polygon meets the tile edge. Also where a polygon is present at the tile corner, the tile corner should also have a pseudo node. These situations are illustrated in the following diagram.



All tile_edge features should be densified so that there is a vertice at least every 0.002 degrees, which is approximately every 200 metres. Tile edge features in different layers will be coincident with each other where they overlap, such that their vertices are coincident.

5.13 Precision, Tolerances and Projections

Coordinates of all features in the working database will be rounded to the nearest 0.1 of a metre.

Each ARC/INFO export file will have the following tolerances:

TOLERANCE TYPE	SETTING (in decimal degrees) for 1:100 000 scale	SETTING (in decimal degrees) for 1:250 000 scale	Metres for 1:100 000	Metres for 1:250 000
Fuzzy	0.000001	0.000001	0.01	0.01
Dangle	0.0004	0.001	40	100
Edit	0.001	0.002	80	200
Nodesnap	0.0004	0.001	40	100
Weed	0.0001	0.00025	10	25
Grain	0.0001	0.00025	10	25
Snap	0.0004	0.001	40	100

Note: these tolerances are set to achieve consistency in the files and may not be those used in production.

The coordinate system description of each ARC/INFO layer will correctly describe the projection type, the spheroid, and units.

The GEODATA tile must be projected to MGA coordinates without error.

5.14 Allocation of Unique Feature Identifiers and Data Quality Pointers

The working data base will contain Unique feature identifiers (UFIs) at 1:250 000 scale, and data quality pointers (q_info) at both scales, for features which lie within the extents of the working data base. These numbers will be identical to those in the GEODATA tile. GEODATA features will be broken at the tile edge in accordance with Section 3.7 Edge Match.

Rules for generation of UFIs are outlined in Section1, chapter 3.4 and rules for generation of q_infos are outlined in Section 1 chapter 3.5.

For the **revision** of a 1:250 000 Series 2 tile, UFIs and qinfos will be added to features in the bleed edge. The UFIs in the bleed area may fall within the UFI range of the primary or adjoining tile. Qinfos in the bleed area will have the <tile-id> of the primary tile.

For the **revision** of a 1:250 000 Series 2 tile, duplicate UFIs are permitted for continuous arc and polygon features and multi-polygon features that have the same items and attributes. They are not permitted in any other circumstances.

5.15 Maintaining Old Unique Feature Identifiers

Except where the loss of old unique feature identifiers is unavoidable, old UFIs should be maintained and stored in the old unique feature identifier field. Loss of the old UFI will be unavoidable when:

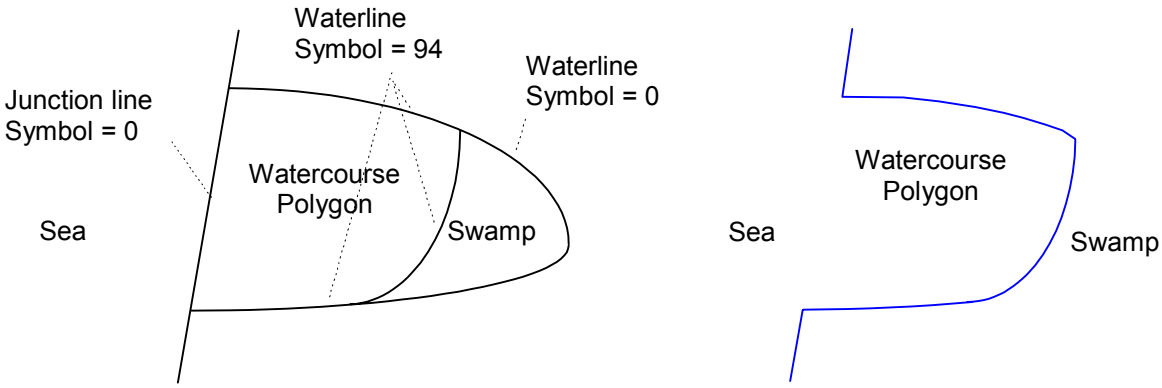
- Two features with different UFIs are combined into one feature.
- A single feature is split into two or more features.
- For the paracentroid of a polygon where the area has changed.
- A feature changes feature class (excluding bulk changes such as Foreshore flat lines being changed to Offshore lines).

Where a feature changes spatial attributes, such as in a road realignment, the old UFI will be maintained (as long as the start and end nodes are the same).

Where a feature changes other attributes, such as a change in a road classification, it will maintain the old UFI.

5.16 Printing and Non-printing Features

Some features do not print on the map. Others may or may not print depending on their attributes, the type of feature they bound or other criteria. For example, waterline, when bounding areas of land subject to inundation, swamp, saline coastal flat or mangrove flat, does not print, whereas, when bounding polygon watercourses or lakes, it does print. When a feature does not print it has a symbol attribute of 0. The symbol attribute description in the feature class dictionary defines when the feature prints, see Appendix A. The following diagram illustrates this.



Working database representation

Representation on map

5.17 The NPIL Database

The National Public and Indigenous Lands (NPIL) database is to be used to delineate and partially attribute reserves and prohibited areas. Only those NPIL Types listed in the table below are to be added to the working database. Additional types in NPIL and isolated areas without a centroid are to be ignored or treated as Reserve or Prohibited Area Voids.

The table shows:

Feature Class Name: The five feature classes which are sourced from the NPIL data base, see the feature class dictionary in Appendix A.

NPIL Type: NPIL Reserve Types (res_type) which are to be included in the working database against the feature class to which they will be coded.

NPIL Reserve Description: This is the term which describes the NPIL Reserve type.

Where the description is followed by an asterisk (*) the reserve overlaps or partially overlaps another reserve. These reserves are shown on a secondary coverage in the NPIL data base. Only areas of these reserves which do not overlap another reserve will be shown.

Reserves will be named using the name field set out in the NPIL Database. If the NPIL database's name field is blank for a reserve that meets selection criterion and no instruction exists within the project file for naming of that feature then the producer should seek clarification from Geoscience Australia on how the Working Database name field is to be populated.

Reserved Area Covers - Feature Codes, NPIL Types and Descriptions

Feature Class Name	NPIL Type	Reserve Description
Reserve - Indigenous Area Feature Code: **abor_res**	**ABOR**	Aboriginal Reserve
Reserve - Prohibited Area Feature Code: **proh_a**	**DEF**	Defence Reserve
Reserve - Forestry Feature Code: **forest_res**	**F**	Forest
	FR	Forestry Reserve
	SF	State Forest
	SFIN	State Forest*
	TR	Timber Reserve
Reserve - Nature Conservation Feature Code: **nat_res**	**AA**	Aboriginal Area
	AQR	Aquatic Reserve
	AS	Aboriginal Site
	BR	Bushland Reserve
	CA	Conservation Area
	COP	Coastal Park

Feature Class Name	NPIL Type	Reserve Description
	COR	Coastal Reserve
	CP	Conservation Park
	CRR	Crown Reserve
	CR	Conservation Reserve
	FFR	Flora and Fauna Reserve
	FHA	Fish Habitat Area
	FLR	Flora Reserve
	FOR	Fossil Reserve
	FTR	Forest Reserve
	GR	Game Reserve
	HA	Historical Area
	HP	Historical Park
	HR	Historical Reserve
	HS	Historical Site
	MAA	Management Agreement Area
	MAR	Marine Reserve
	MCP	Marine and Coastal Park
	MNNR	Marine National Nature Reserve
	MNP	Marine National Park
	MP	Marine Park
	MR	Muttonbird Reserve
	NAP	Nature Park
	NCR	Nature Conservation Reserve
	NNR	National Nature Reserve
	NP	National Park
	NPS	National Park
	NR	Nature Reserve
	NRA	Nature Recreation Area
	P	Park
	PA	Protected Area
	PUR	Public Reserve
	R	Reserve
	RA	Reference Area
	REP	Regional Park
	RGR	Regional Reserve

Feature Class Name	NPIL Type	Reserve Description
	RP	Recreation Park
	RR	Recreation Reserve
	RSR	Resources Reserve
	SCR	Scenic Reserve
	SGR	State Game Reserve
	SP	State Park
	SR	State Reserve
	SRA	State Recreation Area
	SW	Historic Shipwreck
	W	Wilderness
	WPA	Wilderness Protection Area
	WR	Wildlife Reserve
	WS	Wildlife Sanctuary
Reserve - Water Supply Poly Code: **water_res**	**CAT**	Catchment Area
	NRWS	Water Supply Reserve *
	WSR	Water Supply Reserve

The following table describes each NPIL authority type, and relates it to a GEODATA "AUTHORITY CODE" value listed in the "Code" column.

Reserved Areas - Authority Codes and Descriptions

Authority	Code	Authority Description
	0	Not applicable
A	**1**	State/Territory National Parks and Wildlife Service or equivalent
AA	**2**	Aboriginal and Torres Strait Islander Commission
AL	**3**	Aboriginal Lands Trust
B	**4**	State Wildlife Authority
C	**5**	Local Government authority
D	**6**	Department of the Environment and Heritage
DD	**7**	Department of Defence (Commonwealth)
F	**9**	State Forestry Commission
L	**10**	State/Territory Lands Department
LC	**11**	Aboriginal Land Council
N	**12**	ACT Parks and Conservation Service
O	**13**	Other State or Federal Government organisations

Authority	Code	Authority Description
P	**14**	Great Barrier Reef Marine Park Authority
PI	**15**	State Department of Primary Industry
PW	**16**	State Department of Water Resources/Public Works
QD	**17**	Queensland Department of Family and Community Services and Aboriginal and Islander Affairs
NR	**18**	Department of Natural Resources, Mines and Energy
CM	**19**	Conservation and Land Management
I	**20**	Department of Indigenous Affairs
Z	**9999**	Other (not specified)

6. Feature Specific Notes

6.1 Contours and Hypsometric Areas

Contours are to be attributed with one of the following values in the contour code field:

CONTOUR CODE	TYPE OF CONTOUR	USAGE
1	Standard	To be used for standard (not depression) Contours.
2	Depression	To be used for depression Contours.
3	Connector on cliff/cutting/embankment/razorback	To be used for Contours added to the data where contours on the repromat were broken for either a cliff, cutting, embankment or razorback symbol.
4	Connector standard	To be used for Contours where the contour's position is not known, for example in a Watercourse or through open cut mine polygons.
5	Interpolated contour	To be used to join discontinued Contours or to replace a Contour absent in the source material for cartographic reasons where a cliff symbol has not been used.

Hypsometric areas will be defined as the areas in between consecutive contours and will carry the elevation of the lowest contour bounding the polygon. Hypsometric areas will not cover the sea and no voids apply to it, for instance, lakes do not form voids in hypsometric areas.

The coastline, including junctions, will be considered to be the 0 metre contour, ie. it will be cloned as the 0 metre contour. The contours resulting from cloning coastal junctions will be attributed as "connector standard", other 0 metre contours along the coastline will be attributed as "standard". Depression contours will be used for closed contours bounding or on the slope of a depression. Standard contours will be used for areas of higher land within a depression.

6.1.1 Contour Cliff Connectors

A contour that is broken by a cliff/cutting/embankment/razorback will be re-connected by a contour cliff/cutting/embankment/razorback connector. When connectors for these features are required, they will be treated in a similar manner to the following cliff situation. If more than one contour is broken by a cliff then the associated connectors must not intersect or overlap, but rather be offset from one another by a minimum of 5 metres. At 1:250 000 these connectors will be within 75 metres of the cliff feature on the downslope side and within 25 metres on the upslope side. At 1:100 000 these connectors will be within 30 metres of the cliff feature on the downslope side and within 10 metres on the upslope side.

6.2 Vegetation

Vegetation Voids less than 250 000 sq m at 1:250 000 scale, and 40 000 sq m at 1:100 000 scale, may be shown as an exception when associated with another feature as specified in the Appendix A Vegetation Void General Notes. The vegetation line bounding Woody Vegetation areas will be highly detailed, showing the convolutions of the edge of the Woody Vegetation, given that the segment length of the vegetation line may approach but not be less than 25 metres at 1:250 000 scale and 10 metres at 1:100 000.

6.3 Inland Islands

There is no polygon feature specifically for inland islands. Inland islands usually appear as Water body voids. If the island is at the mouth of a river and is met on either side by a junction feature then part of the bounding line of the island appears in the framework layer, shown as waterline, and the remainder appears in the waterbody layer, also shown as waterline. In this case no paracentroid appears in the feature as no closed polygon is created, see Section 1 chapter 3.8.5. For both inland islands and islands which do not appear as polygons (and are not adjacent to junction features) a locality feature of type ‘waterbody island‘ is placed near the middle of the island.

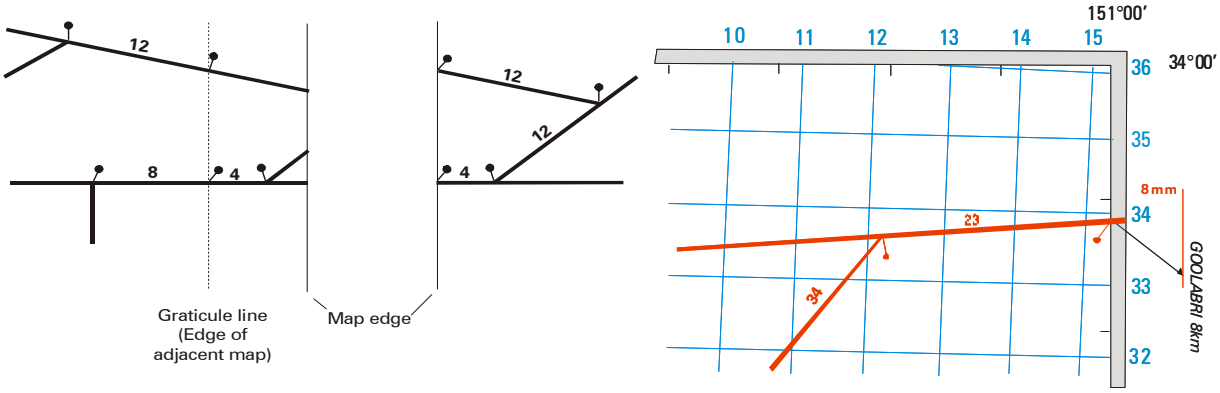
6.4 Kilometric Distance Indicators

Kilometric distance indicators and the associated distances will be placed to avoid ambiguity and allow the calculation of route distances. Particular care should be taken around the map edges with the placement of kilometric distance indicators. Placement of indicators should be consistent between adjacent sheets and allow calculation of distances to continue from one sheet to another.

1:250 000 map distance measurement
On the south and west sides of the map, measurements will be shown to the edge of the map. On the north and east sides, distances will be shown to the graticule line which forms the edge of the adjacent map. Where there is a destination point to be indicated within the bleed edge a distance will be given to that point from the graticule line which forms the edge of the adjacent map.

1:100 000 map distance measurement
On the south and west sides of the map, measurements will be shown to the edge of the map. On the north and east sides, distances will be shown to the GDA94 graticule line which forms the edge of the adjacent GDA94 map. No destination point will be indicated within the area between the GDA94 and AGD66 graticule lines.

Example:



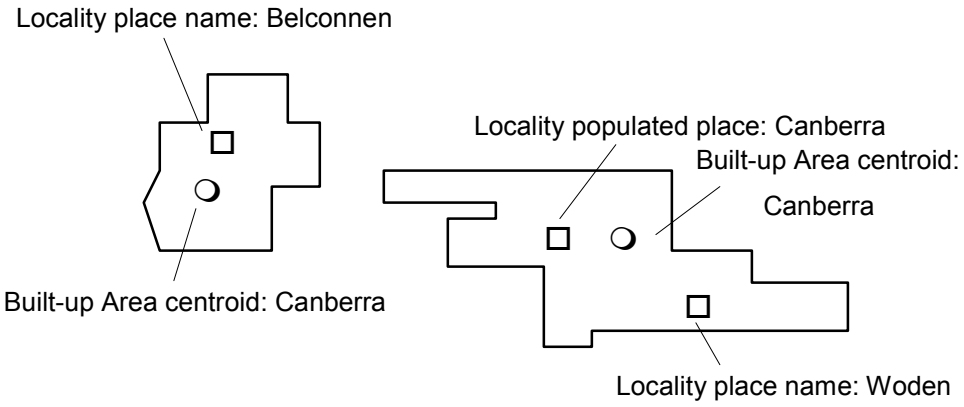
6.5 Localities

6.5.1 Place Names and Populated Places

All named places or populated places appearing in the base data/material will be included in the working database unless there is clear evidence the named feature no longer exists. Populated place is used if the population of the place is greater than 200, - see 'Locality' in the feature class dictionary, Appendix A.

The feature point for a populated place will be positioned coincident with a point on the road network unless there is no road within 1 mm at map scale of the built-up area associated with the populated place. If necessary, a vertice will be created on the road coincident with the locality populated place feature. For populated places with a population over 20 000 the point should be placed as near as possible on the road network to the location of the central post office.

The following diagram illustrates how large built-up areas generally have within their extents one or more localities of type "place name".



6.5.2 Homestead

Abandoned homesteads will not be shown as a Locality of code 4 but rather as a building in the buildings layer. Homesteads will be cloned as buildings. Named buildings other than operational homesteads will be cloned as localities of type place name.

6.5.3 Mountain, Pass and Road Junction

Mountains and passes are to be placed in their true planimetric position as shown on the map, however for passes traversed by a road the pass will be coincident with a vertice on the road.

Named road junctions will be in the working database as locality road junctions. The road junction will be placed coincident with the node of the road intersection.

6.5.4 Cape, Bay, Beach and Waterbody Island

Cape features will be placed at a point over the land representative of the cape. Bay features will be placed in the centre of the bay. All named beaches on the existing previous edition maps will be in the working database except where an adjacent populated place has the same root name, for example Bondi and Bondi Beach. Beaches will be placed coincident with the waterline at the approximate centre of the beach. All named inland islands appearing on the existing previous edition maps will be held as locality of type waterbody islands in the working database, see chapter 6.3 Inland Islands.

6.5.5 Cemetery

Named cemeteries shown as a point feature will be in the working database as localities of type cemetery, see also Cemetery in the feature class dictionary, Appendix A.

6.6 Locality Mountain Features, Spot Elevations And Horizontal Control Points

The above features may appear in close proximity (within a distance of 1mm at map scale from one another) when first extracted from the source data. When this occurs the following rules will be applied.

Locality mountains will be left in their current location. The name of the Locality will be shown on the map in preference to the alpha-numeric code for the Horizontal control point. The Locality will have a symbol number of 0.

Where a horizontal control point and a spot elevation are in close proximity to one another and have the same elevation to the nearest metre, the spot elevation will be moved to have the same location as the Horizontal control point and the spot elevation will have a symbol number of 0.

Where a horizontal control point and a spot elevation are in close proximity to one another but the elevations differ by more than a metre, their respective positions will be maintained. Normally the Spot elevation will have a symbol number of 0 and the elevation of the Horizontal control point will be shown. However, if the Spot elevation is the highest elevation on the map or is higher than the Horizontal control point by more than 25 metres at 1:250 000 or 10 metres at 1:100 000, the Spot elevation will be symbolised and its elevation shown on the map and the Horizontal control point will have a symbol number of 0.

Where a cultural feature such as a landmark point feature lies in close proximity to a Horizontal control point, spot elevation or symbolised locality mountain, the cultural feature has precedence and will be the only symbol shown, unless the spot elevation is the highest spot elevation on the map.

6.6.1 Spot Elevations

All statements in the following chapter relate to the selection of features for capture and display in the 1:250 000 data product and for display only on the 1:100 000 map products. All 250K GEODATA Series 1 spot elevations will be captured for the 1:100 000 data product.

Spot elevations will be selected (for capture and display at 1:250 000 and for display at 1:100 000) to best show terrain shape, change of slope and high and low points. In any group of related features (ridges peaks or saddles) the highest elevation shall be shown. The density of the spot elevations selected will not be reduced from that on the latest previous edition map. (This overrides all other rules and applies when the latest previous edition map of the equivalent scale has been provided to the producers.)

Preference will be given in descending order to elevations that are:

- closest to Localities of code 6 (mountain-peak-hill) and in an isolation (ie enclosed by a contour);
- closest to Aircraft Facilities;
- in isolations;
- greater than half the contour interval above the next lower contour;
- in depressions
- on cliffs or razorbacks
- on sand ridges

All occurrences of the highest Spot elevation in the map area and the GEODATA tile will be maintained unless they are less than 12mm apart at map scale. Where two or more occurrences of the highest Spot elevation are less than 12mm apart only one will be included.

Spot elevations that have the same elevation as a contour will not be selected. Should the highest Spot elevation have the same elevation as a contour clarification will be sought from Geoscience Australia.

Spot elevations with a GEODATA Series 1 point determination of 4 (contour) will not be selected at 1:250 000 scale. Should the highest Spot elevation be of point determination 4 or if the full extent (or a significant proportion of the extent) of the tile contains only point determination 4 this should be referred back to Geoscience Australia for direction on how to proceed.

Spot elevations selected will be no less than 12 mm apart at map scale. Spot elevations selected should be no more than 64 mm apart at map scale where points meeting the above criteria are available in the source data.

<u>At 1:100 000</u>

As discussed above all spot elevations from GEODATA Series 1 relief theme will be captured in the 1:100 000 data product. The selection that is made should be compatible with the contour features. In addition, spot elevations representing locality mountains of a known height, should be consistent with the 100K source material and 250K map product, anomalies should be referred back to Geoscience Australia.

At 1:250 000

Spot elevations will be retained from the base Series 2 data. When Spot elevations with a GEODATA Series 1 point determination of 4 (contour) have been selected this will be accepted as having previously been authorised by Geoscience Australia as a valid exception.

Reference will also be made to the latest previous edition map when not produced by Geoscience Australia. If as a result of comparison significant logical anomalies are found which may influence map users perception of the topography of the area clarification should be sought from Geoscience Australia (e.g. If there are values higher on the latest previous edition map which have a difference greater than 5m or when inconsistencies with contours would result).

The overall selection of spot elevations in the base Series 2 data should be reviewed against the criteria discussed in the upper portion of this chapter and if the selection is found to be inadequate, the GEODATA Series 1 relief theme should be utilised to conduct any corrections required. If the GEODATA Series 1 relief theme has not been provided – a request for its supply should be made to Geoscience Australia.

6.7 Roads, Road Bridges and Road Tunnels

6.7.1 Road Names

For inclusion of road names in relation to road classification, refer to the 'Road' entity in Appendix A.

If a road has multiple names then the names will be separated by hyphens. Hyphens are also to be included where they form part of the official road name eg. *KOO-WEE-RUP ROAD.* Hyphens will not be included however where road names define a route between locality destinations eg. the naming convention *BROWNSVILLE – GREENTHORPE ROAD* is incorrect, and the name should be shown as *BROWNSVILLE GREENTHORPE ROAD* instead.

Road bridges and road tunnels carry the name of the road not of the bridge or tunnel. Where a road bridge or tunnel was named on the latest previous edition map the bridge or tunnel name will be added to the text note field.

6.7.2 Route Numbers

If a road has multiple route numbers then the numbers will be separated by hyphens. Up to three National Route Numbers (NRN) or State Route Numbers (SRN) and one alternate road number can be attached to a road.

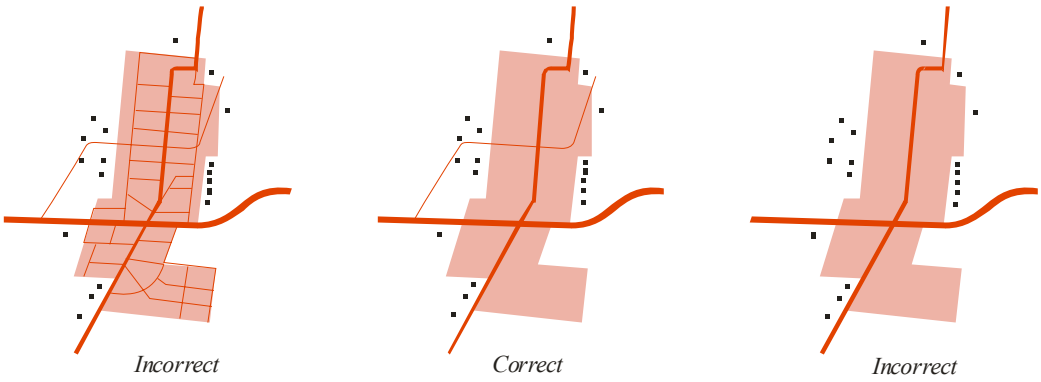
For example: John Highway

National route number attribute	38-15-11-A1 (A1= alternate route 1)
State route number attribute	79-23-32-A79 (A79 = alternate route 79)

6.7.3 Roads through Built-Up Area

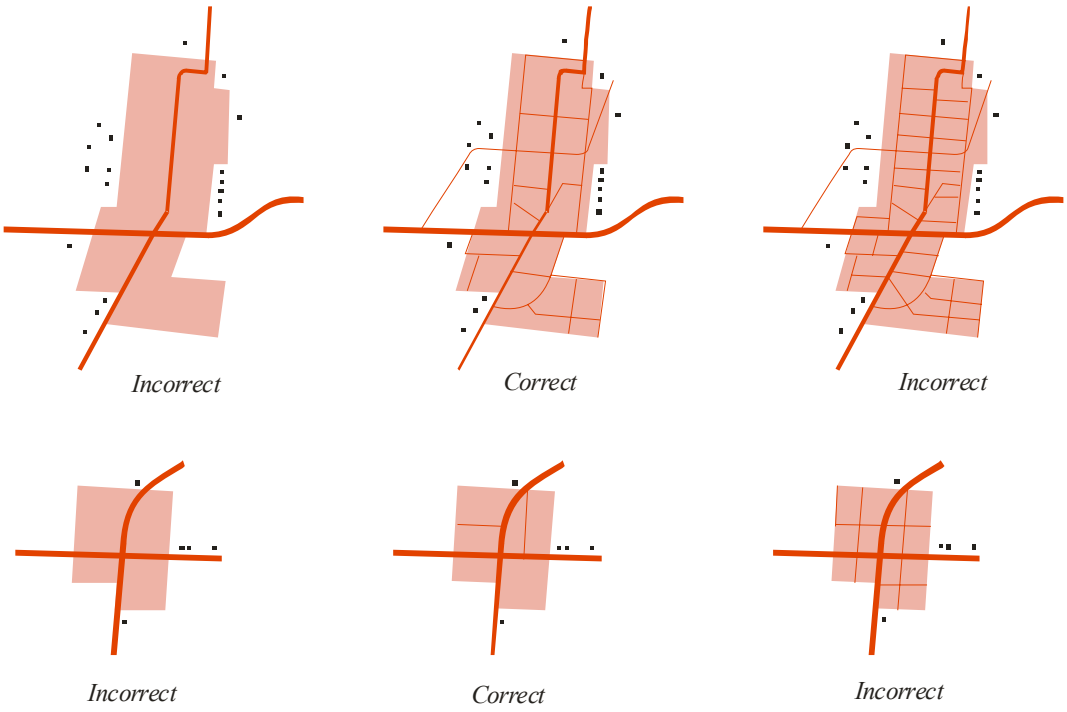
At 1:250000 dual carriageways, principal roads and secondary roads will be shown within built-up areas. Minor roads entering a builtup area will be continued to the first intersection with a dual carriageway, principal or secondary road. Minor roads totally contained in built-up areas will not be shown. This rule extends to other features in the built-up area layer where they are surrounded by a built-up area.

Road pattern interpretation within BUA – see example below;.



At 1:100000 dual carriageways, principal roads and secondary roads will be shown within built-up areas. Minor roads entering a builtup area will be continued to the first intersection with a major through route (preference should be given to intersections with dual carriageways, principal or secondary roads). In addition, sufficient minor roads will be shown to reflect the Built-up Area's road pattern. Select the major through routes (from Primary Reference material) to reflect the road pattern within the area whilst avoiding clutter. This rule extends to other features in the built-up area layer where they are surrounded by a built-up area.

Road pattern interpretation within BUA - see example below;



6.8 State Borders

The sections of state borders which do not follow natural features do not necessarily fall exactly on the meridians of longitude or the parallels of latitude. Rather they have been defined by survey monuments. The coordinates for these monuments have been used in the construction of the GEODATA 100K-COAST dataset, which in turn will be used for defining these sections of state borders in the working database. As the survey

monuments defining the state borders correspond to vertices in the data, these state border features in the data must not be filtered or point reduced.

Where state borders follow a natural feature, such as the Murray River, the natural feature as represented in the data must be cloned as the state border into the framework layer. The GEODATA 100K-COAST dataset is not to be used to define the state border in these places, since it would then not match with the feature it should follow. The GEODATA 100K-COAST dataset can be used as a guide to deciding which sections of natural feature should be cloned.

6.9 Waterbodies

6.9.1 Naming Lakes and Double Line Streams

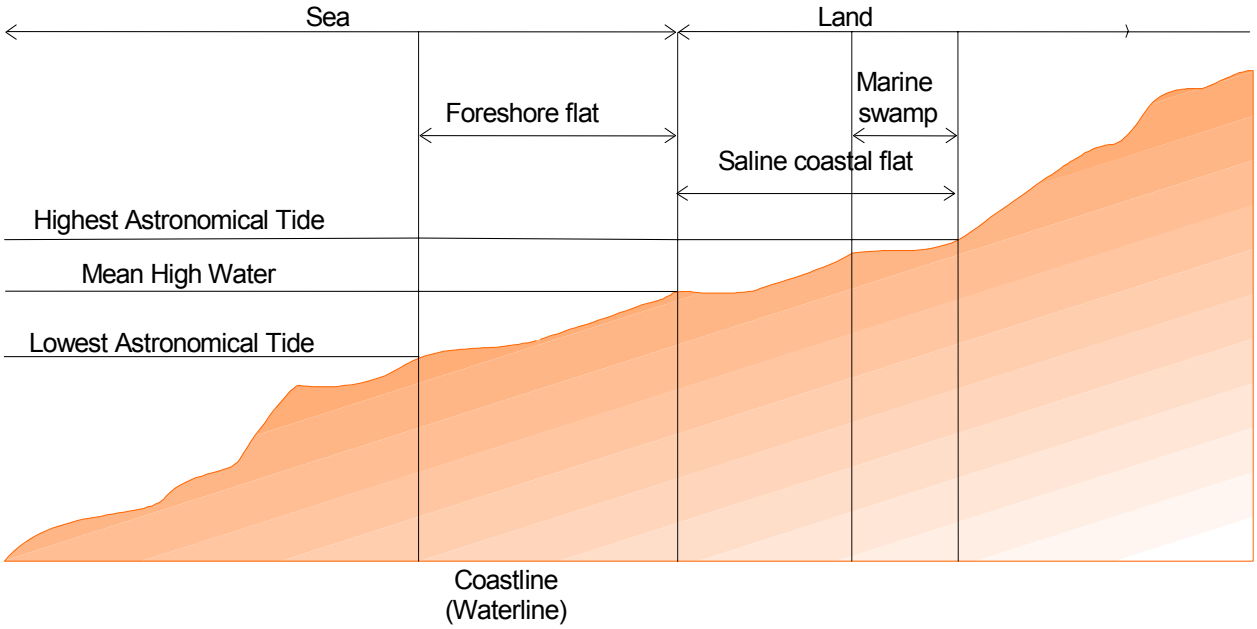
All waterbody names that appear on the base data/material or on revision source material will be carried as attributes of the appropriate features in the database. For polygons it is the paracentroid that carries the attributes.

6.9.2 Naming Swamps, Reservoirs and Land Subject to Inundation

The name, if known, will be added for all swamps, reservoirs and land subject to inundation shown in the database. Note that the name of some features may not match the feature type. For instance, the name “Williams Swamp” may in fact be associated with an area of “land subject to inundation” rather than an area of “swamp”.

6.9.3 Coastal Relationships

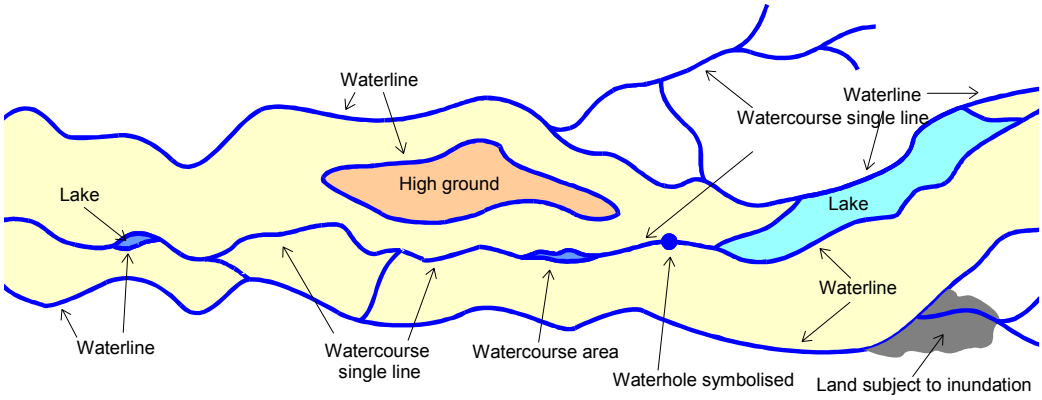
The following diagram identifies features associated with coastlines and shows the relationships between the respective features.



Coastline follows the mean high water mark except in areas covered by mangroves, where the limit between the sea and the land is considered to be the seaward side of the mangroves.

6.9.4 Features With Braided Watercourses.

The following diagram identifies features associated with braided watercourses lying within primary banks and shows the relationships between the respective features.

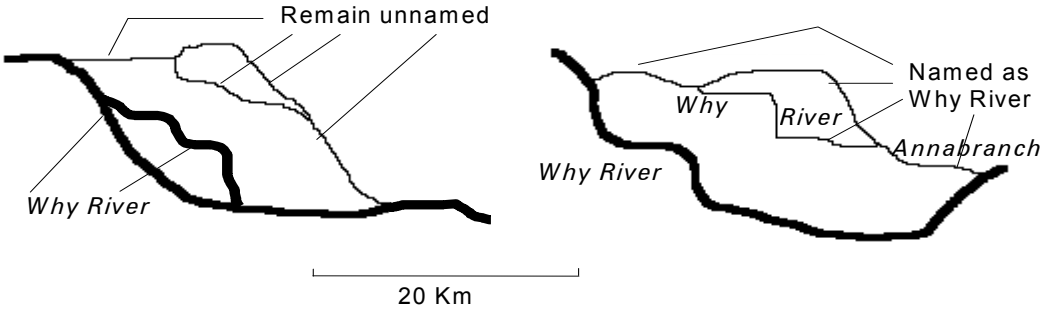


6.10 Watercourses

6.10.1 Naming Watercourses, Anabranches, and Connectors.

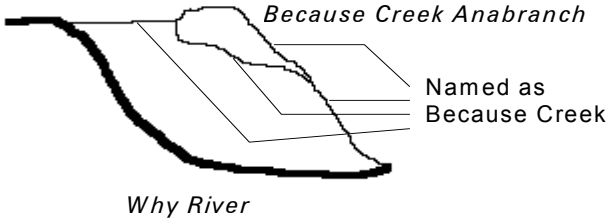
All stream names (for double & single line streams) that appear on the repromat or base data/material will be added/retained as attributes to the appropriate features (including connectors) in the database.

Where a stream forms a complete loop by leaving and re-joining a main stream (that is, an anabranch), and is less than 20 kilometres long, it will carry the name of the main stream as its name attribute. If it is more than 20 kilometres long, it will not carry the name of the main stream as its name attribute. Regardless of length, if it is labelled as "anabranch" on the latest previous edition map it will carry the name of the main stream. The following illustrations show examples of this.



In some circumstances an anabranch may be separately named and in these cases it will maintain its own name in the name attribute field.

In the case below the name field for the anabranch feature will be "BECAUSE CREEK". Once again the word "anabranch" does not appear in the name attribute field.



Where a stream leaving the main stream joins a different stream and is not separately named it will not be given a name attribute.

Refer to Section 1 chapters 3.8.3 and 3.8.4 of this specification for more details on Connector and Junction features respectively.

7. Submission of Data to Geoscience Australia

7.1 Material and Format

The following products, data and information will accompany the submission of a completed tile to Geoscience Australia.

- the tile number
- the tile name
- notification as to whether the latest previous edition map was an NTMS, JOG or State Mapping Authority product.
- the elevation range for spot heights and survey marks
- notification as to whether imagery has been used
- the date of the imagery
- version number of the Technical Specifications used
- Amendment of specification used (when using base specification Amendment = 0)
- repromat for map production
- one hard copy chemical proof of the map
- the working database
- TOPO-250K GEODATA Series 2 tile or TOPO-100K GEODATA Series 1 tile
- All source materials supplied including remote sensed imagery, revision information (ie. maps, plans, listings etc), repromat, digital revision & source data and project files
- a listing of working database coverages
- a listing of GEODATA coverages
- a printout of the TQI (tile quality information) table for each coverage (the tables will be in the relevant GEODATA coverage export files)
- a printout of the FRQ (frequency) table for each coverage (the tables will be in the relevant GEODATA coverage export files)
- a printout of the UFI range for each theme (250K only)
- a printout of the DQT (Data Quality Table) (the DQT table will also be supplied as an exported INFO file)
- a listing of sources used for attribute information and their reliability date
- a listing of sources used for feature positioning and their reliability date
- a scanning transformation RMS error report(s) for all newly scanned data
- any comments about production or revision

A Validation and Testing (VAT) submission form should be used when submitting these details. A blank VAT submission form is found in Appendix J.

The working database and the GEODATA tile will be submitted as separate ARC/INFO Export files on CD-ROM. Both file types will be located at the top level of the tape ie. no subdirectories are to be used for separation purposes when writing files to CD-ROM. These files must have double precision accuracy and coordinates must be on GDA94. GDA94 will be included as a user defined datum in all export files using the parameters set out in appendix M. All files must be uncompressed export files. The GEODATA tile will be in geographic coordinates and the working data base in MGA94. File names will take the form <tile_id><cover_id><coord_id><precision_id>.exx

where

<tile_id> map sheet identifier eg h5612 for 250 000
s7563 for 100 000 (note 's' prefix)

<cover_id> A single character code identifying the cover in the following table

<coord_id> A single character code identifying the coordinate system
ie a = MGA94
l = Geographic

<precision_id> A single character code identifying the data as double precision.
d = double precision

.exx Standard ARC/INFO Export file suffix.

Example: (working database export file naming convention)

h5612bad.e00 = Built-up area cover for 1:250 000 tile SH56-12 in double precision MGA94.

s8432bad.e00 = Built-up area cover for 1:100 000 tile s8432 in double precision MGA94.

COVER	<cover_id>
aeronautical area	z
aeronautical point	a
auxiliary contours	2
buildings point	g
built-up areas	b
cartographic features	5
contours	c
cultural area	i
drainage	d
framework	f
graticule	7
localities	l

COVER	<cover_id>
map boundary	8
map grid	6
marine facilities	h
morphology	m
navigation	n
offshore	o
pipelines	p
powerlines	k
rail transport	r
relief area	q
reserved areas	3
road transport	v
sand ridges	s
security areas	1
seismic lines	4
spot heights	e
survey marks	y
utilities	u
vegetation	t
vegetation miscellaneous	j
waterbodies	w
waterpoints	x

Only those coverages that need to be populated for the work unit will be supplied. Layers for which coverages are not supplied because they contain no features will be annotated 'not applicable' on the list of coverages for both the working database and the GEODATA tile.

Repromat will be 7 plate making film negatives. The negatives will be in register with one another and clearly labelled with the following information on a permanent label:

Map sheet number
Map sheet name
Edition number
date of production
PMS colour.

The 7 colours will be:

Process Black
Process Blue
Process Yellow
Red, PMS 485
Brown, PMS 471
Green, PMS 347

Reflex Blue.

The proof will be a full colour proof made from the negatives supplied.

After the tile has passed validation and testing all tile specific source material will be returned to Geoscience Australia.

7.2 Impact of Specification Changes

These Technical Specifications are subject to continuous improvement. Changes made may impact on the working data base, the map and/or the GEODATA tile. Where such changes occur the changes must be implemented for work units allocated after the change comes into effect.

The version number of the specification used for production must be shown at the 'Version number of the Technical Specification' line of the relevant scale VAT Submission form (see appendix J).

The procedure for suggesting changes or improvements to the specification is in Distribution and Suggestions for Change, page iii at the front of this specification.

8. Post production Validation and Testing

A brief description of the testing process is outlined in Appendix J. Appendix J also describes the tests.

8.1 Results of Tests and Resubmitting Failed Tiles

On completion of the VAT tests a summary report is generated. The report lists the tests that have been failed, and any other errors which, by themselves, do not cause the tile to fail. The details of each error are briefly described. When possible, the UFI of each feature in error is included. The report summarises whether the tile passes or fails.

The following table is an example of a report:

VALIDATION AND TESTING REPORT

WORK UNIT:	**C5116 BARTON SHOAL**
PRODUCT TYPE:	GEODATA SERIES 2 & NATMAP EDITION 2
DATE SUBMITTED:	1 August 2004
DATE COMPLETED:	14 August 2004
SEQUENCE NUMBER:	1
SUPPLIER:	WDS&S LIMITED
SPECIFICATION TESTED:	Version 3.6
AMENDMENT TESTED:	0

TEST RESULT: PASSED

Refer to the Geoscience Australia TOPOGRAPHIC DATA AND MAP SPECIFICATIONS, Section 3.8.2 - Results of Tests and Resubmitting Failed Tiles - for guidance on VAT testing conditions.

Producers correcting data as a result of FAILED TESTS or OTHER TEST ERRORS should make all

corrections in the WORKING DATABASE. The producers should not only correct the errors listed in the summary report but search the data, correcting similar errors.

FAILED TESTS

NIL

OTHER TEST ERRORS

14. SEGMENTS LESS THAN 0.00022 DEGREES IN LENGTH

There are short line segments in the Road Transport coverage.

51. POLYGON FEATURES IN THE VEGETATION COVERAGE INCORRECTLY OVERLAP OTHER POLYGON FEATURES

Two Vegetation lines with UFIs BG12801127 and BG12801189 should not overlap Open-cut Areas.

ADDITIONAL COMMENTS

A tile fails VAT when any of the tolerances for any of the tests on any of the coverages or products are exceeded. When a tile fails VAT a copy of the above report is sent to the producer. VAT staff are forbidden from editing or correcting the data. The producer will correct the data. Because the data are only sampled for many tests, when a tile fails VAT the producer will not only correct the errors listed in the summary report but search the untested parts of the data for similar errors. When they are satisfied that all errors are corrected the producer will resubmit the tile to Geoscience Australia's VAT cell. Re-submission follows the process outlined in chapter 7 Submission of Data to Geoscience Australia.

Any corrections made as a result of VAT testing must be made in the working database, and the GEODATA files and map repromat must be regenerated from that data base prior to re-submission to VAT. See section 3 chapter 2 General Information.

Resubmitted data will be fully tested again, using a different sampling area. If the tile fails again it will be returned to the producer again for correction and subsequent re-submission.

When the data and associated products pass VAT, the summary report will be sent to the producer stating that the data and associated products have passed VAT, the data will be archived and the map printed.

Appendix A - Data dictionary

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1. Use of the data dictionary

The data dictionary has six components:

- **The feature class cross reference**
- **The included terms cross reference**
- **The feature class dictionary**
- **The secondary table dictionary**
- **The symbol dictionary**
- **The layer table dictionary**

The feature class cross reference relates commonly used terms to feature classes in the data. The list is sorted alphabetically by the commonly used terms. While the list is not exhaustive it is designed to help assigning entities to the appropriate feature class. Once the appropriate feature class has been determined the feature class dictionary should be consulted for the conditions of use of the feature. Where a commonly used term relates to more than one feature the dictionary entries for both features should be consulted to determine the appropriate feature class for a particular entity.

The included terms cross reference relates the feature classes to commonly used terms. This list is sorted alphabetically by feature class and should be used to determine the range of features that fall within a feature class. Again the list is not exhaustive and the feature class dictionary should be consulted for the conditions of use of the feature class.

The feature class dictionary gives detailed information on the definition, conditions of use and other reference information for valid feature classes. An explanation of the feature class dictionary's components is given on the next page.

The secondary table dictionary defines secondary tables which are included in the GEODATA database. For the data quality table, the tile quality information table and the tile frequency table, the purpose and a brief description are included. The fields for the table are also defined. A field descriptor eg KEY FIELD is followed by the field code in round brackets e.g. *(Q_INFO)* and the data type in square brackets *[CHARACTER; 8]*. This information is followed by a short definition of the field. The remaining secondary tables decode attribute entries specific to certain feature classes. The dictionary entries for these secondary tables replicate the table. The table name is the name of the attribute in the primary table, the first column is the attribute code for legal entries and the second the description for each code. The first row defines the field names and data types. These secondary attribute tables are common to all GEODATA tiles and are included for reference.

The symbol dictionary defines the symbols that will be used on the map. Colours appearing in the dictionary are indicative only; the printed colours will be as specified. Symbols are not drawn to scale.

The layer table dictionary gives definitions of the attribute tables for each layer.

1.1 The feature class dictionary layout

The facing page gives a sample dictionary entry. The entries include the following information:

Feature Class	This is the name of the feature class.
Definition	The definition which applies to the feature class **Classification of features is to be based on their match to the feature class definition and not their name. For example, an area named Williams Swamp may need to be classified as Land Subject to inundation.**
Minimum size for inclusion	The size criteria for inclusion. Length and/or height criteria may apply to linear features such as levees or vertical features such as towers. Area criteria may apply to polygons. All additional features captured from any other source must comply with the size criteria as stated in these specifications. Length criteria will not apply to features that join two or more features in the same network at each end. The minimum area indicated for polygon feature classes is the minimum area for the whole feature, ie. where a polygon feature crosses a tile edge the minimum area criteria will be applied against the total area of the polygon itself, not just that individual part appearing on either the GEODATA tile or the working database. Similarly for linear features the minimum length applies to the whole feature not just that part which falls on the tile.
Scales	This gives the scales for which the feature class applies. Some feature classes are only used for 1:100 000 or 1:250 000 mapping and data, others at both scales.
Feature usage	This shows whether the data is used for GEODATA and mapping, GEODATA only, mapping only or for the Working database only. Features used for GEODATA and/or mapping will also be included in the working database. The example on the facing page indicates a feature class used in GEODATA and the working database. A mapping entry indicates that some aspect of the feature's spatial object or its attribute object will appear on the map. In some cases this will be a text note attribute which will be reflected in an annotation feature. For example, a Crater feature is not symbolised on the map but the name and text note attributes will be reflected in the type on the map

Spatial object

Representation	This is the spatial object type; polygon, chain or point (see Section 1 chapter 2.1). Some features may have two representations depending on the size of the entity or the scale which is being applied.
Planimetric accuracy	Planimetric accuracy is given in metres with the accuracy for 1:250 000 before the slash and for 1:100 000 after the slash. Where planimetric accuracy is not applicable for a spatial object at a particular scale this is indicated by a dash (-).
Feature code	The feature code is the code which identifies that spatial object type for the feature class. The first field in every primary attribute table, feat_code, holds this code. This field has a data type of CHARACTER; 12. Feature codes will be all lower case.
Coverage	The letter code for the Arc/Info coverage(s) the feature is stored in.

Data attributes

The data attributes define the fields in the primary table with the exception of feat_code. For each field a field descriptor eg UNIQUE FEATURE IDENTIFIER is followed by the field code in round brackets e.g. (ufi) and the data type in square brackets e.g. [character; 10] and a brief description e.g. Alphanumeric feature Identifier. This information may be followed by legal entries used in the field and their description if held as codes (this information is also given in the secondary attribute tables). The data type definitions are standard ARC/INFO data type definitions of the form, Input width (n), output width (n), type. Input and output width is numbers. Types are:

I means Integer
D means Date
C means Character
B means Binary
N,d means Number followed by the number of decimal places eg N,2 for a number with two decimal places
F,d means Floating point number followed by the number of decimal places eg F,2 for a Floating point number with two decimal places.

Attributes used in GEODATA and the working database are shown in normal type. Attributes specific to the working database are shown in italics.

General notes

The general notes section includes any additional selection criteria which may apply and other notes on usage which apply to the working database or both the maps and GEODATA.

GEODATA

The GEODATA section gives information specific to the use of the feature class in GEODATA. This section will be blank if there are no specific notes or the feature class is not used in GEODATA.

Map	The map section gives information specific to the use of the feature class on the map. This section will be blank if there are no specific notes or information from the feature class is not used on the map.
Data rules	The data rules section specifies usage of the feature class in the working database and, if relevant, GEODATA. The relationship of the feature class to other classes is outlined.
Related features	Feature classes which have a relationship with this feature class.
Related chapters	Chapters in the specification which include information relevant to this feature class.

Note: Geoscience Australia does not warrant the Related features and Related chapters sections of the Feature class dictionary as being complete. Bidders and producers are cautioned to familiarise themselves with the whole specification (see page ii of the preamble to the specifications).

Feature Class

Definition

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

1:250 000
&
1:100 000

GEODATA feature

Spatial object

Representation	Spatial object type	
Planimetric Accuracy	1:250K / 1:100K	
Feature code	Feature code	
Coverage (see Section 3 chapter 4)		

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (See Section 1 chapter 3.5 and Section 3 chapter 5.4)

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (See Section 1 chapter 3.4 and Section 3 chapter 5.4)

Working database only

SYMBOL (symbol) [binary; 4,5,B,0]
Symbol number applicable:
420

General Notes

GEODATA

Map

Data rules

Related features

Related chapters

2. FEATURE CLASS CROSS REFERENCE

Commonly used term	Feature class
Abandoned road	Road
Aboriginal Area (Indigenous Area)	Reserve – Nature Conservation
Aboriginal community (indigenous community)	Building
Aboriginal community (indigenous community)	Builtup area
Aboriginal place (Indigenous Place)	Reserve – Nature Conservation
Aboriginal Reserve (Indigenous Reserve)	Reserve - Indigenous area
Aboriginal Site (Indigenous Site)	Reserve – Nature Conservation
Aerial Cableway	Aerial cableway
Aerodrome	Aircraft facility
Aerodrome	Airport
Aircraft facility	Aircraft facility
Aircraft facility line	Aircraft facility line
Airport	Aircraft facility
Airport	Airport
Alpine Reserve	Reserve - Nature conservation
Annotation	Annotation
Aquaculture pens (non land based)	Landmark area
Aquaculture pond	Settling pond
Aquarium	Water tank
Aquatic Reserve	Reserve - Nature conservation
Aqueduct	Canal
Area subject to inundation	Land subject to inundation
Artificial lake	Reservoir
Automatic weather station	Landmark point
Backshore	Saline coastal flat
Bank	Reef
Barchan dunes	Sand dunes
Barrage	Dam
Bay	Locality
Beach	Locality
Beach	Sand
Beacon	Landmark point
Bench mark	Bench mark
Billabong	Lake
Billabong	Waterhole

FEATURE CLASS CROSS REFERENCE

Commonly used term	Feature class
Billabong boundary	Waterline
Blowhole	Cave
Bluff	Cliff
Boat lift	Lock
Boat ramp	Boat ramp
Boom gate	Gate
Border - State or Territory	State border
Bore	Bore
Bore drain	Canal
Boulder	Pinnacle
Boulder field	Rocky outcrop
Boundary - National Park	Reserve line
Boundary - Nature Reserve	Reserve line
Boundary - Prohibited area	Prohibited area line
Boundary - Recreation Reserve	Reserve line
Boundary - Reserved area	Reserve line
Boundary - Reserved Indigenous Land	Reserve line
Boundary - Scenic Reserve	Reserve line
Boundary - State	State border
Boundary - State Forest	Reserve line
Boundary - State or Territory	State border
Boundary - State Park	Reserve line
Boundary - Territory	State border
Boundary - Water Catchment Area	Reserve line
Boundary Conservation Area	Reserve line
Boundary Defence Force	Prohibited area line
Boundary Fauna Reserve	Reserve line
Boundary Flora Reserve	Reserve line
Boundary Forest Reserve	Reserve line
Boundary Game Reserve	Reserve line
Boundary Historical Area	Reserve line
Boundary International	Boundary International
Breakaway	Cliff
Breakwater	Breakwater
Bridge - foot	Foot bridge
Bridge - railway	Railway bridge
Bridge - road	Road bridge
Bridle path	Foot track
Brook	Watercourse

FEATURE CLASS CROSS REFERENCE

Commonly used term	Feature class
Building	Building
Building - factory	Building
Building - hospital	Building
Building - ruin	Building
Building - shopping complex	Building
Building line	Building line
Built-up area	Built-up area
Built-up area line	Built-up area line
Built-up area void	Built-up area void
Bush gate	Gate
Butte	Pinnacle
Cableway (aerial)	Aerial cableway
Canal	Canal
Canal	Salt evaporator internal line
Cane grass	Marine swamp
Cape	Locality
Cascade	Waterfall
Cataracts	Waterfall
Cattle grid	Stock grid
Causeway - rail	Railway causeway
Causeway - road	Road causeway
Cave	Cave
Cavern	Cave
Cay	Island
Cay	Reef
Cemetery	Cemetery
Cemetery	Locality
Chair lift	Aerial cableway
Channel	Canal
Chimney	Landmark point
City	Built-up area
Civic square	Park
Claypan	Lake
Claypan boundary	Waterline
Claypit	Open cut/Mining area
Cleared line	Seismic line/Cleared line
Cliff	Cliff
Coastal Park	Reserve - Nature conservation
Coastal Reserve	Reserve - Nature conservation

FEATURE CLASS CROSS REFERENCE

Commonly used term	Feature class
Coastline	Waterline
Connecting road	Road
Connector	Connector
Conservation Area	Reserve - Nature conservation
Conservation Area boundary	Reserve line
Conservation Park	Reserve - Nature conservation
Conservation Reserve	Reserve - Nature conservation
Contour	Contour
Control point - bench mark	Bench mark
Control point - horizontal	Horizontal control point
Control point - trig station	Horizontal control point
Conveyor	Conveyor
Conveyor belt	Conveyor
Cooling tower	Landmark point
Coral	Offshore rock
Coral	Reef
Cotton Gin (seasonal)	Landmark area
Cove	Locality
Cowal	Watercourse
Crater	Crater
Creek	Watercourse
Crescent dunes	Sand dunes
Culvert	Canal
Cut	Cutting
Cutting	Cutting
Dam	Dam
Dam - carrying road	Dam
Defence area	Prohibited area
Defence Force boundary	Prohibited area line
Defence Reserve	Prohibited area
Destination arrow - road	Road destination arrow
Digging	Mine
Digging	Open cut/mining area
Distance indicator	Kilometric distance indicator
Distorted surface	Distorted surface
Diversion cut	Spillway
Divided road	Road
Dock	Jetty
Dog fence	Fence

FEATURE CLASS CROSS REFERENCE

Commonly used term	Feature class
Doline	Cave
Double line watercourse	Lake
Double line watercourse boundary	Waterline
Double line watercourse infill	Lake
Drain	Canal
Dry dock	Dry dock
Dunes - barchan	Sand dunes
Dunes - crescent	Sand dunes
Dunes - longitudinal	Sand ridge
Dunes - sand	Sand dunes
Embankment	Embankment
Environmental Park	Reserve - Nature conservation
Escarpment	Cliff
Factory	Building
Falls	Waterfall
Fauna Reserve	Reserve - Nature conservation
Fauna Sanctuary	Reserve - Nature conservation
Feature identifier arrow	Feature pointer
Feature pointer	Feature pointer
Fence	Fence
Fence - dog	Fence
Fence - vermin proof	Fence
Ferry	Ferry route
Ferry crossing	Ferry route
Ferry route	Ferry route
Ferry terminal	Jetty
Fire tower	Landmark point
Fish Habitat Reserve	Reserve - Nature conservation
Fish hatchery	Settling pond
Fish pen	Settling pond
Fish pond	Water tank
Floating dry dock	Dry dock
Floodway	Road causeway
Flora and Fauna Reserve	Reserve - Nature conservation
Flora Reserve	Reserve - Nature conservation
Foot bridge	Foot bridge
Foot path	Foot track
Foot track	Foot track
Ford	Ford

FEATURE CLASS CROSS REFERENCE

Commonly used term	Feature class
Foreshore flat	Foreshore flat
Foreshore flat line	Offshore line
Forest	Woody vegetation
Forest Park	Reserve - Forestry
Forest Reserve	Reserve - Forestry
Freeway	Road
Game Reserve	Reserve - Nature conservation
Game Reserve boundary	Reserve line
Gap	Locality
Gardens	Park
Gas pipeline	Pipeline
Gas well	Gas well
Gate	Gate
Gateway	Gate
Geothermal power station	Landmark area
Gilgai	Distorted surface
Gnamma hole	Waterpoint
Golf course	Park
Gorge	Locality
Graticule line	Graticule line
Grave	Locality
Gravel pit	Open cut/Mining area
Graveyard	Cemetery
Graving dock	Dry dock
Grid	Stock grid
Grid line	Grid line
Groyne	Breakwater
Gully	Watercourse
Headland	Locality
Hedge	Windbreak
Hedgerow	Windbreak
Helipad	Aircraft facility
Heliport	Aircraft facility
Highway	Road
Hill	Locality
Historical Area	Reserve - Nature conservation
Historical Area boundary	Reserve line
Homestead	Locality
Homestead tank	Water tank

FEATURE CLASS CROSS REFERENCE

Commonly used term	Feature class
Horizontal control point	Horizontal control point
Hospital	Building
Hovercraft route	Ferry route
Hut	Building
Hydrofoil route	Ferry route
Hypso area	Hypsometric area
Indigenous Area (refer Aboriginal entry)	Reserve – Nature Conservation
Inlet	Locality
International boundary	Boundary - International
Intertidal flat	Foreshore flat
Inundation area	Land subject to inundation
Island	Island
Jetty	Jetty
Jump-up	Cliff
Junction	Junction
Kilometric distance indicator	Kilometric distance indicator
Kilometric distances	Kilometric distance indicator
Knob	Locality
Lagoon	Lake
Lagoon	Waterhole
Lagoon boundary	Waterline
Lagoon infill	Lake
Lake	Lake
Lake	Waterpoint
Lake - artificial	Reservoir
Lake boundary	Waterline
Lake infill	Lake
Land subject to inundation	Land subject to inundation
Landing	Jetty
Landing Ground	Aircraft facility
Landing platform	Jetty
Landing stage	Jetty
Landing strip	Aircraft facility
Landmark	Landmark
Launching ramp	Boat ramp
Lava flow	Distorted surface
Levee	Levee
Levee	Salt evaporator internal line
Levee	Settling pond internal line

FEATURE CLASS CROSS REFERENCE

Commonly used term	Feature class
Lighthouse	Lighthouse
Lignun	Marine Swamp
Locality	Locality
Lock	Lock
Lookout	Landmark point
Lookout	Locality
Mainland	Mainland
Mangrove	Mangrove
Mangrove flat	Mangrove flat
Map area	Map area
Map mask	Map mask
Marina	Jetty
Marina pens	Jetty
Marine and Coastal Park	Reserve - Nature conservation
Marine Park	Reserve - Nature conservation
Marine Park/Defence Reserve	Reserve - Nature conservation
Marine Park/Fish Habitat Reserve	Reserve - Nature conservation
Marine Reserve	Reserve - Nature conservation
Marine swamp	Marine swamp
Marker - National route	Route marker - National
Marker - state route	Route marker - State
Marsh	Swamp
Marshalling yard	Railway
Mast	Landmark point
Microwave tower	Landmark point
Mill	Windpump
Mine	Mine
Mine - open cut	Open cut/Mining area
Mole	Breakwater
Monorail	Railway
Monument	Landmark point
Mountain	Locality
Mountain range	Locality
Muttonbird Reserve	Reserve - Nature conservation
National Highway marker	Route marker - National
National Park	Reserve - Nature conservation
National Park boundary	Reserve line
National Park/Fish Habitat Reserve	Reserve - Nature conservation
National Park/Water Supply Reserve	Reserve - Nature conservation

FEATURE CLASS CROSS REFERENCE

Commonly used term	Feature class
National Park/Wetland Reserve	Reserve - Nature conservation
National route marker	Route marker - National
Native well	Waterpoint
Nature conservation reserve	Reserve - Nature conservation
Nature Park	Reserve - Nature conservation
Nature Reserve	Reserve - Nature conservation
Nature Reserve boundary	Reserve line
Neatline	Tile edge
Nomenclature	Annotation
Notation	Annotation
Nursery	Orchard or vineyard
Ocean	Sea
Offshore line	Offshore line
Offshore rock	Offshore rock
Offshore void	Offshore void
Oil pipeline	Pipeline
Oil refinery	Building
Oil refinery	Landmark area
Oil refinery	Storage tank
Oil storage tank	Storage tank
Oil well	Gas well
Open Cut	Open cut/Mining area
Open cut mine	Open cut/Mining area
Orchard	Orchard or vineyard
Outcamp	Locality
Outcamp	Locality
Outstation	Building
Outstation	Locality
Outstation	Locality
Oval	Park
Overflow	Spillway
Overpass	Road bridge
Overpass/underpass	Rail overpass
Overpass/underpass	Road overpass
Oxbow	Lake
Oxbow	Waterhole
Oxbow boundary	Waterline
Oxbow infill	Lake

FEATURE CLASS CROSS REFERENCE

Commonly used term	Feature class
Oyster beds	Landmark area
Park	Park
Pass	Locality
Patch	Reef
Patent slipway	Boat ramp
Peak	Locality
Peninsula	Locality
Penstock	Pipeline
Pier	Jetty
Pine plantation	Plantation
Pinnacle	Pinnacle
Pipeline	Pipeline
Pipeline - gas	Pipeline
Pipeline - oil	Pipeline
Pipeline - other than water	Pipeline
Pipeline - water	Pipeline
Place name	Locality
Plantation	Orchard or vineyard
Point	Locality
Pond	Lake
Pond	Waterhole
Pond - settling	Settling ponds
Pond - tailing	Settling ponds
Pond boundary	Waterline
Pond infill	Lake
Pondage	Reservoir
Pontoon	Jetty
Pool	Lake
Pool	Waterhole
Pool	Waterpoint
Pool - swimming	Water tank
Pool infill	Lake
Populated place	Locality
Power transmission line	Powerline
Powerline	Powerline
Precipice	Cliff
Prohibited area	Prohibited area
Prohibited area boundary	Prohibited area line
Prohibited area line	Prohibited area line

FEATURE CLASS CROSS REFERENCE

Commonly used term	Feature class
Prohibited area void	Prohibited area void
Protected area	Reserve - Nature conservation
Punt	Ferry route
Punt crossing point	Ferry route
Quarantine area	Prohibited area
Quarry	Open cut/Mining area
Quay	Jetty
Racecourse	Park
Racetrack	Park
Railway	Railway
Railway bridge	Railway bridge
Railway causeway	Railway causeway
Railway station	Railway station
Railway tunnel	Railway tunnel
Rainforest	Rainforest
Rainforest - temperate	Rainforest
Rainforest - tropical	Rainforest
Rapid area line	Rapid area line
Rapids	Rapid
Razorback	Razorback
Recreation area	Park
Recreation Park (SA only)	Reserve - Nature conservation
Recreation Reserve	Reserve - Nature conservation
Recreation Reserve boundary	Reserve line
Reef	Offshore rock
Reef	Reef
Reef line	Offshore line
Reference Area	Reserve - Nature conservation
Regional Reserve	Reserve - Nature conservation
Relief area line	Relief area line
Relief area void	Relief area void
Research station	Landmark area
Reserve boundary - recreation	Reserve line
Reserved Indigenous Land boundary	Reserve line
Reserved line	Reserve line
Reserved void	Reserve void
Reservoir	Reservoir
Reservoir	Water tank
Reservoir boundary	Waterline

FEATURE CLASS CROSS REFERENCE

Commonly used term	Feature class
Rest area	Landmark area
Ridge	Locality
Rifle range	Park
Ring road	Road
River	Watercourse
Road	Road
Road - abandoned	Road
Road - approximate position	Road
Road bridge	Road bridge
Road causeway	Road causeway
Road destination arrow	Road destination arrow
Road distance marker	Kilometric distance indicator
Road junction	Locality
Road on dam	Road on dam
Road tunnel	Road tunnel
Road underground	Road tunnel
Roadhouse	Building
Rock	Locality
Rock	Offshore rock
Rock	Pinnacle
Rock	Reef
Rock column	Pinnacle
Rock ledge	Offshore rock
Rock ledge	Reef
Rockhole	Waterpoint
Rocky outcrops	Rocky outcrop
Rodeo grounds	Park
Route marker - national	Route marker - National
Route marker - State	Route marker - State
Rubbish tip	Rubbish tip
Ruin	Building
Runway	Aircraft facility
Runway	Runway centreline
Runway boundary line	Aircraft facility line
Runway centreline	Runway centreline
Runway void	Aircraft facility void
Saline coastal flat	Saline coastal flat
Salt evaporator	Salt evaporator
Salt evaporator internal line	Salt evaporator internal line

FEATURE CLASS CROSS REFERENCE

Commonly used term	Feature class
Saltpan	Lake
Saltpan boundary	Waterline
Saltpan infill	Lake
Saltworks	Salt evaporator
Sand	Sand
Sand dunes	Sand dunes
Sand pit	Open cut/Mining area
Sand ridge	Sand ridge
Sandridge	Sand ridge
Scarp	Cliff
Scenic Reserve	Reserve - Nature conservation
Scientific Area	Reserve - Nature conservation
Scientific Purposes Reserve	Reserve - Nature conservation
Scientific Reserve	Reserve - Nature conservation
Scrape	Open cut/Mining area
Scrub	Woody vegetation
Sea	Sea
Sea wall	Sea wall
Seismic line	Seismic line/Cleared line
Settlement	Built-up area
Settling pond internal line	Settling pond internal line
Settling ponds	Settling ponds
Sewage filtration beds	Settling ponds
Sewage treatment plant	Settling ponds
Shaft	Mine
Shipwreck	Wreck
Shoal	Offshore rock
Shoal	Reef
Shopping complex	Building
Shoreline	Waterline
Showgrounds	Park
Shrub	Woody vegetation
Siding	Railway
Silo	Landmark point
Sinkhole	Cave
Ski lift	Aerial cableway
Slip rails	Gate
Slipway	Boat ramp
Slurry pond	Settling ponds

FEATURE CLASS CROSS REFERENCE

Commonly used term	Feature class
Smokestack	Landmark point
Soak	Waterpoint
Solar farm	Landmark area
Solar panels	Landmark point
Spillway	Spillway
Spoil dump	Open cut/Mining area
Spot elevation	Spot elevation
Spot height	Spot elevation
Spring	Spring
Spur line	Railway
State border	State border
State Boundary	State border
State forest	Reserve - Forestry
State Forest boundary	Reserve line
State Park	Reserve - Nature conservation
State Park boundary	Reserve line
State Reserve	Reserve - Nature conservation
State route marker	Route marker - State
Station - railway	Railway station
Stilling basin	Settling pond
Stock grid	Cattle grid
Stock grid	Stock grid
Storage tank	Storage tank
Storage well	Storage tank
Stream	Watercourse
Subject to inundation area	Land subject to inundation
Submerged rock	Offshore rock
Submerged rock	Reef
Suburb	Built-up area
Swamp	Swamp
Swimming pool	Water tank
Tailing ponds	Settling ponds
Tailings dump	Open cut/Mining area
Tank	Water tank
Tank - storage (other than water)	Storage tank
Taxiway	Aircraft Facility Line
Temperate rainforest	Rainforest
Territory border	State border
Territory Boundary	State border

FEATURE CLASS CROSS REFERENCE

Commonly used term	Feature class
Through route	Road
Tidal flat	Foreshore flat
Tidal power farm	Landmark area
Tile edge	Tile edge
Timber Reserve	Reserve - Forestry
Tollway	Road
Tor	Locality
Tower	Landmark point
Town	Built-up area
Track - foot	Foot track
Track - vehicle	Road
Track - walking	Foot track
Tracking station	Landmark area
Trail	Foot track
Training track	Park
Tramway	Railway
Transition point	Transition point
Transmission line - power	Powerline
Trig station	Horizontal control point
Tropic of Capricorn	Tropic of Capricorn
Tropical rainforest	Rainforest
Tunnel - railway	Railway tunnel
Tunnel - road	Road tunnel
Turkey nest	Water tank
Underground road	Road tunnel
Underpass	Road bridge
Vegetation	Woody vegetation
Vegetation - clear	Vegetation Void
Vegetation - dense	Woody vegetation
Vegetation - Forest	Woody vegetation
Vegetation - hedge	Windbreak
Vegetation - medium	Woody vegetation
Vegetation - nursery	Orchard or vineyard
Vegetation - orchard	Orchard or vineyard
Vegetation - pine plantation	Plantation
Vegetation - plantation	Orchard or vineyard
Vegetation - rainforest	Rainforest
Vegetation - temperate rainforest	Rainforest
Vegetation - tropical rainforest	Rainforest

FEATURE CLASS CROSS REFERENCE

Commonly used term	Feature class
Vegetation - vineyard	Orchard or vineyard
Vegetation - windbreak	Windbreak
Vegetation line	Vegetation Line
Vegetation void	Vegetation Void
Vehicle track	Road
Vermin proof fence	Fence
Village	Built-up area
Vineyard	Orchard or vineyard
Walking track	Foot track
Waste disposal site	Rubbish tip
Water body boundary	Waterline
Water body void	Water body void
Water Catchment Area	Reserve - Water Supply
Water pipeline	Pipeline
Water supply Reserve	Reserve - Water supply
Water tank	Water tank
Waterbody island	Locality
Waterbody island	Waterbody void
Watercourse	Watercourse
Watercourse - double line	Lake
Watercourse - double line boundary	Waterline
Watercourse - double line infill	Lake
Waterfall	Waterfall
Waterhole	Lake
Waterhole	Waterhole
Waterhole boundary	Waterline
Waterhole infill	Lake
Waterline	Waterline
Waterpoint	Waterpoint
Weir	Dam
Well	Bore
Well - gas	Gas well
Well - oil	Gas well
Well - storage	Storage tank
Well - water	Bore
Well (native)	Waterpoint
Wetland	Swamp
Wetland Reserve	Reserve - Nature conservation
Wharf	Wharf

FEATURE CLASS CROSS REFERENCE

Commonly used term	Feature class
White water	Rapid
Wilderness	Reserve - Nature conservation
Wildlife Sanctuary	Reserve - Nature conservation
Wind farm	Landmark area
Wind generator	Landmark point
Windbreak	Windbreak
Windmill	Windpump
Windpump	Windpump
Woodland	Woody vegetation
Woolshed	Building
Wreck	Wreck
Yard	Yard

3. INCLUDED TERMS CROSS REFERENCE

Feature class	Commonly used term
Aerial cableway	Aerial Cableway
Aerial cableway	Cableway (aerial)
Aerial cableway	Chair lift
Aerial cableway	Ski lift
Aircraft facility	Aerodrome
Aircraft facility	Aircraft facility
Aircraft facility	Airport
Aircraft facility	Helipad
Aircraft facility	Heliport
Aircraft facility	Landing Ground
Aircraft facility	Landing strip
Aircraft facility	Runway
Aircraft facility line	Aircraft facility line
Aircraft facility line	Runway boundary line
Aircraft facility line	Taxiway
Aircraft facility void	Runway void
Airport	Aerodrome
Airport	Airport
Annotation	Annotation
Annotation	Nomenclature
Annotation	Notation
Bench mark	Bench mark
Bench mark	Control point - bench mark
Boat ramp	Boat ramp
Boat ramp	Launching ramp
Boat ramp	Patent slipway
Boat ramp	Slipway
Bore	Bore
Bore	Well
Bore	Well - water
Boundary - International	International boundary
Boundary International	Boundary International
Breakwater	Breakwater
Breakwater	Groyne

FEATURE CLASS CROSS REFERENCE

Feature Class	Commonly used term
Breakwater	Mole
Building	Aboriginal Community (Indigenous Community)
Building	Building
Building	Building - factory
Building	Building - hospital
Building	Building - ruin
Building	Building - shopping complex
Building	Factory
Building	Hospital
Building	Hut
Building	Oil Refinery
Building	Outstation
Building	Roadhouse
Building	Ruin
Building	Shopping complex
Building	Woolshed
Building line	Building line
Builtup area	Aboriginal community (indigenous community)
Built-up area	Built-up area
Built-up area	City
Built-up area	Settlement
Built-up area	Suburb
Built-up area	Town
Built-up area	Village
Built-up area line	Built-up area line
Built-up area void	Built-up area void
Canal	Aqueduct
Canal	Bore drain
Canal	Canal
Canal	Channel
Canal	Culvert
Canal	Drain
Cave	Blowhole
Cave	Cave
Cave	Cavern
Cave	Doline
Cave	Sinkhole

FEATURE CLASS CROSS REFERENCE

Feature Class	Commonly used term
Cemetery	Cemetery
Cemetery	Graveyard
Cliff	Bluff
Cliff	Breakaway
Cliff	Cliff
Cliff	Escarpment
Cliff	Jump-up
Cliff	Precipice
Cliff	Scarp
Connector	Connector
Contour	Contour
Conveyor	Conveyor
Conveyor	Conveyor belt
Crater	Crater
Cutting	Cut
Cutting	Cutting
Dam	Barrage
Dam	Dam
Dam	Dam - carrying road
Dam	Weir
Distorted surface	Distorted surface
Distorted surface	Gilgai
Distorted surface	Lava flow
Dry dock	Dry dock
Dry dock	Floating dry dock
Dry dock	Graving dock
Embankment	Embankment
Feature pointer	Feature identifier arrow
Feature pointer	Feature pointer
Fence	Dog fence
Fence	Fence
Fence	Fence - dog
Fence	Fence - vermin proof
Fence	Vermin proof fence
Ferry route	Ferry
Ferry route	Ferry crossing
Ferry route	Ferry route
Ferry route	Hovercraft route

FEATURE CLASS CROSS REFERENCE

Feature Class	Commonly used term
Ferry route	Hydrofoil route
Ferry route	Punt
Ferry route	Punt crossing point
Foot bridge	Bridge - foot
Foot bridge	Foot bridge
Foot track	Bridle path
Foot track	Foot path
Foot track	Foot track
Foot track	Track - foot
Foot track	Track - walking
Foot track	Trail
Foot track	Walking track
Ford	Ford
Foreshore flat	Foreshore flat
Foreshore flat	Intertidal flat
Foreshore flat	Tidal flat
Woody vegetation	Forest
Woody vegetation	Scrub
Woody vegetation	Shrub
Woody vegetation	Vegetation
Woody vegetation	Vegetation - dense
Woody vegetation	Vegetation - Forest
Woody vegetation	Vegetation - medium
Woody vegetation	Woodland
Gas well	Gas well
Gas well	Oil well
Gas well	Well - gas
Gas well	Well - oil
Gate	Boom gate
Gate	Bush gate
Gate	Gate
Gate	Gateway
Gate	Slip rails
Graticule line	Graticule line
Grid line	Grid line
Horizontal control point	Control point - horizontal
Horizontal control point	Control point - trig station
Horizontal control point	Horizontal control point

FEATURE CLASS CROSS REFERENCE

Feature Class	Commonly used term
Horizontal control point	Trig station
Hypsometric area	Hypso area
Island	Cay
Island	Island
Jetty	Dock
Jetty	Ferry terminal
Jetty	Jetty
Jetty	Landing
Jetty	Landing platform
Jetty	Landing stage
Jetty	Marina
Jetty	Marina pens
Jetty	Pier
Jetty	Pontoon
Jetty	Quay
Junction	Junction
Kilometric distance indicator	Distance indicator
Kilometric distance indicator	Kilometric distance indicator
Kilometric distance indicator	Kilometric distances
Kilometric distance indicator	Road distance marker
Lake	Billabong
Lake	Claypan
Lake	Double line watercourse
Lake	Double line watercourse infill
Lake	Lagoon
Lake	Lagoon infill
Lake	Lake
Lake	Lake infill
Lake	Oxbow
Lake	Oxbow infill
Lake	Pond
Lake	Pond infill
Lake	Pool
Lake	Pool infill
Lake	Saltpan
Lake	Saltpan infill
Lake	Watercourse - double line
Lake	Watercourse - double line infill

FEATURE CLASS CROSS REFERENCE

Feature Class	Commonly used term
Lake	Waterhole
Lake	Waterhole infill
Land subject to inundation	Area subject to inundation
Land subject to inundation	Inundation area
Land subject to inundation	Land subject to inundation
Land subject to inundation	Subject to inundation area
Landmark	Landmark
Landmark area	Aquaculture pens (non land based)
Landmark area	Cotton Gin (seasonal)
Landmark area	Geothermal Power Station
Landmark area	Oil refinery
Landmark area	Oyster Beds
Landmark area	Research station
Landmark area	Rest Area
Landmark area	Solar Farm
Landmark area	Tidal Power Farm
Landmark area	Tracking Station
Landmark area	Wind Farm
Landmark point	Automatic weather station
Landmark point	Beacon
Landmark point	Chimney
Landmark point	Cooling tower
Landmark point	Fire tower
Landmark point	Lookout
Landmark point	Mast
Landmark point	Microwave tower
Landmark point	Monument
Landmark point	Silo
Landmark point	Smokestack
Landmark point	Solar panels
Landmark point	Tower
Landmark point	Wind generator
Levee	Levee
Lighthouse	Lighthouse
Locality	Bay
Locality	Beach
Locality	Cape

FEATURE CLASS CROSS REFERENCE

Feature Class	**Commonly used term**
Locality	Cemetery
Locality	Cove
Locality	Gap
Locality	Gorge
Locality	Grave
Locality	Headland
Locality	Hill
Locality	Homestead
Locality	Inlet
Locality	Knob
Locality	Locality
Locality	Lookout
Locality	Mountain
Locality	Mountain Range
Locality	Outcamp
Locality	Outcamp
Locality	Outstation
Locality	Outstation
Locality	Pass
Locality	Peak
Locality	Peninsula
Locality	Place Name
Locality	Point
Locality	Populated Place
Locality	Ridge
Locality	Road Junction
Locality	Rock
Locality	Tor
Locality	Waterbody Island
Lock	Boat lift
Lock	Lock
Mainland	Mainland
Mangrove	Mangrove
Mangrove flat	Mangrove flat
Map area	Map area
Map mask	Map mask
Marine swamp	Cane grass

FEATURE CLASS CROSS REFERENCE

Feature Class	Commonly used term
Marine swamp	Lignun
Marine swamp	Marine swamp
Mine	Digging
Mine	Mine
Mine	Shaft
Offshore line	Foreshore flat line
Offshore line	Offshore line
Offshore line	Reef line
Offshore rock	Coral
Offshore rock	Offshore rock
Offshore rock	Reef
Offshore rock	Rock
Offshore rock	Rock ledge
Offshore rock	Shoal
Offshore rock	Submerged rock
Offshore void	Offshore void
Open cut/Mining area	Claypit
Open cut/Mining area	Digging
Open cut/Mining area	Gravel pit
Open cut/Mining area	Mine - open cut
Open cut/Mining area	Open Cut
Open cut/Mining area	Open cut mine
Open cut/Mining area	Quarry
Open cut/Mining area	Sand pit
Open cut/Mining area	Scrape
Open cut/Mining area	Spoil dump
Open cut/Mining area	Tailings dump
Orchard or vineyard	Nursery
Orchard or vineyard	Orchard
Orchard or vineyard	Plantation
Orchard or vineyard	Vegetation - nursery
Orchard or vineyard	Vegetation - orchard
Orchard or vineyard	Vegetation - plantation
Orchard or vineyard	Vegetation - vineyard
Orchard or vineyard	Vineyard
Park	Civic square
Park	Gardens
Park	Golf course

FEATURE CLASS CROSS REFERENCE

Feature Class	Commonly used term
Park	Oval
Park	Park
Park	Racecourse
Park	Racetrack
Park	Recreation area
Park	Rifle range
Park	Rodeo grounds
Park	Showgrounds
Park	Training track
Plantation	Pine plantation
Plantation	Vegetation - pine plantation
Pinnacle	Boulder
Pinnacle	Butte
Pinnacle	Pinnacle
Pinnacle	Rock
Pinnacle	Rock column
Pipeline	Gas pipeline
Pipeline	Oil pipeline
Pipeline	Penstock
Pipeline	Pipeline
Pipeline	Pipeline - gas
Pipeline	Pipeline - oil
Pipeline	Pipeline - other than water
Pipeline	Pipeline - water
Pipeline	Water pipeline
Powerline	Power transmission line
Powerline	Powerline
Powerline	Transmission line - power
Prohibited area	Defence area
Prohibited area	Defence Reserve
Prohibited area	Prohibited area
Prohibited area	Quarantine area
Prohibited area line	Boundary - Prohibited area
Prohibited area line	Boundary Defence Force
Prohibited area line	Defence Force boundary
Prohibited area line	Prohibited area boundary
Prohibited area line	Prohibited area line
Prohibited area void	Prohibited area void

FEATURE CLASS CROSS REFERENCE

Feature Class	**Commonly used term**
Rail overpass	Overpass/underpass
Railway	Marshalling yard
Railway	Monorail
Railway	Railway
Railway	Siding
Railway	Spur line
Railway	Tramway
Railway bridge	Bridge - railway
Railway bridge	Railway bridge
Railway causeway	Causeway - rail
Railway causeway	Railway causeway
Railway station	Railway station
Railway station	Station - railway
Railway tunnel	Railway tunnel
Railway tunnel	Tunnel - railway
Rainforest	Rainforest
Rainforest	Rainforest - temperate
Rainforest	Rainforest - tropical
Rainforest	Temperate rainforest
Rainforest	Tropical rainforest
Rainforest	Vegetation - rainforest
Rainforest	Vegetation - temperate rainforest
Rainforest	Vegetation - tropical rainforest
Rapid	Rapids
Rapid	White water
Rapid area line	Rapid area line
Razorback	Razorback
Reef	Bank
Reef	Cay
Reef	Coral
Reef	Patch
Reef	Reef
Reef	Rock
Reef	Rock ledge
Reef	Shoal
Reef	Submerged rock
Relief area line	Relief area line
Relief area void	Relief area void

FEATURE CLASS CROSS REFERENCE

Feature Class	Commonly used term
Reserve - Forestry	Forest Park
Reserve - Forestry	Forest Reserve
Reserve - Forestry	State forest
Reserve - Forestry	Timber Reserve
Reserve - Indigenous area	Aboriginal Reserve (Indigenous Reserve)
Reserve - Nature conservation	Aboriginal Area (Indigenous Area)
Reserve - Nature conservation	Aboriginal Place (Indigenous Place)
Reserve - Nature conservation	Aboriginal Site (Indigenous Site)
Reserve - Nature conservation	Alpine Reserve
Reserve - Nature conservation	Aquatic Reserve
Reserve - Nature conservation	Coastal Park
Reserve - Nature conservation	Coastal Reserve
Reserve - Nature conservation	Conservation Area
Reserve - Nature conservation	Conservation Park
Reserve - Nature conservation	Conservation Reserve
Reserve - Nature conservation	Environmental Park
Reserve - Nature conservation	Fauna Reserve
Reserve - Nature conservation	Fauna Sanctuary
Reserve - Nature conservation	Fish Habitat Reserve
Reserve - Nature conservation	Flora and Fauna Reserve
Reserve - Nature conservation	Flora Reserve
Reserve - Nature conservation	Game Reserve
Reserve - Nature conservation	Historical Area
Reserve - Nature conservation	Marine and Coastal Park
Reserve - Nature conservation	Marine Park
Reserve - Nature conservation	Marine Park/Defence Reserve
Reserve - Nature conservation	Marine Park/Fish Habitat Reserve
Reserve - Nature conservation	Marine Reserve
Reserve - Nature conservation	Muttonbird Reserve
Reserve - Nature conservation	National Park
Reserve - Nature conservation	National Park/Fish Habitat Reserve
Reserve - Nature conservation	National Park/Water Supply Reserve
Reserve - Nature conservation	National Park/Wetland Reserve
Reserve - Nature conservation	Nature conservation reserve
Reserve - Nature conservation	Nature Park
Reserve - Nature conservation	Nature Reserve
Reserve - Nature conservation	Protected area
Reserve - Nature conservation	Recreation Park (SA only)

FEATURE CLASS CROSS REFERENCE

Feature Class	Commonly used term
Reserve - Nature conservation	Recreation Reserve
Reserve - Nature conservation	Reference Area
Reserve - Nature conservation	Regional Reserve
Reserve - Nature conservation	Scenic Reserve
Reserve - Nature conservation	Scientific Area
Reserve - Nature conservation	Scientific Purposes Reserve
Reserve - Nature conservation	Scientific Reserve
Reserve - Nature conservation	State Park
Reserve - Nature conservation	State Reserve
Reserve - Nature conservation	Wetland Reserve
Reserve - Nature conservation	Wilderness
Reserve - Nature conservation	Wildlife Sanctuary
Reserve - Water Supply	Water Catchment Area
Reserve - Water supply	Water supply Reserve
Reserve line	Boundary - National Park
Reserve line	Boundary - Nature Reserve
Reserve line	Boundary - Recreation Reserve
Reserve line	Boundary - Reserved area
Reserve line	Boundary - Reserved Indigenous Land
Reserve line	Boundary - Scenic Reserve
Reserve line	Boundary - State Forest
Reserve line	Boundary - State Park
Reserve line	Boundary - Water Catchment Area
Reserve line	Boundary Conservation Area
Reserve line	Boundary Fauna Reserve
Reserve line	Boundary Flora Reserve
Reserve line	Boundary Forest Reserve
Reserve line	Boundary Game Reserve
Reserve line	Boundary Historical Area
Reserve line	Conservation Area boundary
Reserve line	Game Reserve boundary
Reserve line	Historical Area boundary
Reserve line	National Park boundary
Reserve line	Nature Reserve boundary
Reserve line	Recreation Reserve boundary
Reserve line	Reserve boundary - recreation
Reserve line	Reserved Aboriginal Land boundary
Reserve line	Reserved line

FEATURE CLASS CROSS REFERENCE

Feature Class	Commonly used term
Reserve line	State Forest boundary
Reserve line	State Park boundary
Reserve void	Reserved void
Reservoir	Artificial lake
Reservoir	Lake - artificial
Reservoir	Pondage
Reservoir	Reservoir
Road	Abandoned road
Road	Connecting road
Road	Divided road
Road	Freeway
Road	Highway
Road	Ring road
Road	Road
Road	Road - abandoned
Road	Road - approximate position
Road	Through route
Road	Tollway
Road	Track - vehicle
Road	Vehicle track
Road bridge	Bridge - road
Road bridge	Overpass
Road bridge	Road bridge
Road bridge	Underpass
Road causeway	Causeway - road
Road causeway	Floodway
Road causeway	Road causeway
Road destination arrow	Destination arrow - road
Road destination arrow	Road destination arrow
Road on dam	Road on dam
Road overpass	Overpass/underpass
Road tunnel	Road tunnel
Road tunnel	Road underground
Road tunnel	Tunnel - road
Road tunnel	Underground road
Rocky outcrop	Boulder field
Rocky outcrop	Rocky outcrops
Route marker - National	Marker - National route

FEATURE CLASS CROSS REFERENCE

Feature Class	Commonly used term
Route marker - National	National Highway marker
Route marker - National	National route marker
Route marker - National	Route marker - national
Route marker - State	Marker - state route
Route marker - State	Route marker - State
Route marker - State	State route marker
Rubbish tip	Rubbish tip
Rubbish tip	Waste disposal site
Runway centreline	Runway
Runway centreline	Runway centreline
Saline coastal flat	Backshore
Saline coastal flat	Saline coastal flat
Salt evaporator	Salt evaporator
Salt evaporator	Saltworks
Salt evaporator internal line	Canal
Salt evaporator internal line	Levee
Salt evaporator internal line	Salt evaporator internal line
Sand	Beach
Sand	Sand
Sand dunes	Barchan dunes
Sand dunes	Crescent dunes
Sand dunes	Dunes - barchan
Sand dunes	Dunes - crescent
Sand dunes	Dunes - sand
Sand dunes	Sand dunes
Sand ridge	Dunes - longitudinal
Sand ridge	Sand ridge
Sand ridge	Sandridge
Sea	Ocean
Sea	Sea
Sea wall	Sea wall
Seismic line/Cleared line	Cleared line
Seismic line/Cleared line	Seismic line
Settling pond	Fish hatchery
Settling pond	Fish pen
Settling pond	Stilling basin
Settling pond internal line	Levee
Settling pond internal line	Settling pond internal line

FEATURE CLASS CROSS REFERENCE

Feature Class	Commonly used term
Settling ponds	Aquaculture pond
Settling ponds	Pond - settling
Settling ponds	Pond - tailing
Settling ponds	Settling ponds
Settling ponds	Sewage filtration beds
Settling ponds	Sewage treatment plant
Settling ponds	Slurry pond
Settling ponds	Tailing ponds
Spillway	Diversion cut
Spillway	Overflow
Spillway	Spillway
Spot elevation	Spot elevation
Spot elevation	Spot height
Spring	Spring
State border	Border - State or Territory
State border	Boundary - State
State border	Boundary - State or Territory
State border	Boundary - Territory
State border	State border
State border	State Boundary
State border	Territory border
State border	Territory Boundary
Stock grid	Grid
Stock grid	Stock grid
Storage tank	Oil refinery
Storage tank	Oil storage tank
Storage tank	Storage tank
Storage tank	Storage well
Storage tank	Tank - storage (other than water)
Storage tank	Well - storage
Swamp	Marsh
Swamp	Swamp
Swamp	Wetland
Tile edge	Neatline
Tile edge	Tile edge
Transition point	Transition point
Tropic of Capricorn	Tropic of Capricorn
Vegetation Line	Vegetation line

FEATURE CLASS CROSS REFERENCE

Feature Class	Commonly used term
Vegetation Void	Vegetation - clear
Vegetation Void	Vegetation void
Water body void	Water body void
Water tank	Aquarium
Water tank	Fish pond
Water tank	Homestead tank
Water tank	Pool - swimming
Water tank	Reservoir
Water tank	Swimming pool
Water tank	Tank
Water tank	Turkey nest
Water tank	Water tank
Waterbody void	Waterbody island
Watercourse	Brook
Watercourse	Cowal
Watercourse	Creek
Watercourse	Gully
Watercourse	River
Watercourse	Stream
Watercourse	Watercourse
Waterfall	Cascade
Waterfall	Cataracts
Waterfall	Falls
Waterfall	Waterfall
Waterhole	Billabong
Waterhole	Lagoon
Waterhole	Oxbow
Waterhole	Pond
Waterhole	Pool
Waterhole	Waterhole
Waterline	Billabong boundary
Waterline	Claypan boundary
Waterline	Coastline
Waterline	Double line watercourse boundary
Waterline	Lagoon boundary
Waterline	Lake boundary
Waterline	Oxbow boundary
Waterline	Pond boundary

FEATURE CLASS CROSS REFERENCE

Feature Class	Commonly used term
Waterline	Reservoir boundary
Waterline	Saltpan boundary
Waterline	Shoreline
Waterline	Water body boundary
Waterline	Watercourse - double line boundary
Waterline	Waterhole boundary
Waterline	Waterline
Waterpoint	Gnamma hole
Waterpoint	Lake
Waterpoint	Native well
Waterpoint	Pool
Waterpoint	Rockhole
Waterpoint	Soak
Waterpoint	Waterpoint
Waterpoint	Well (native)
Wharf	Wharf
Windbreak	Hedge
Windbreak	Hedgerow
Windbreak	Vegetation - hedge
Windbreak	Vegetation - windbreak
Windbreak	Windbreak
Windpump	Mill
Windpump	Windmill
Windpump	Windpump
Wreck	Shipwreck
Wreck	Wreck
Yard	Yard

4. Feature Class Dictionary

Feature classes are listed in alphabetical order commencing on the next page.

AERIAL CABLEWAY

A conveyor system in which carrier units run on wire cables strung between supports.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
3 mm			

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	chairlift	
Coverage (see Section 3 chapter 4)	u	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] Name of aerial cableway

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
30

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

GEODATA

Map

A descriptive note is to be added e.g. ‘chairlift’.

Data rules

Related features

Conveyor

Related chapters

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

AIRCRAFT FACILITY

A paved or cleared strip on which aircraft take off and land.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Point	Polygon
Planimetric Accuracy	100 / -	- / 9999
Feature code	aircrft_flty	aircrft_f_a
Coverage (see Section 3 chapter 4)	a	z

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] Name of aircraft facility.

AIRCRAFT FACILITY TYPE (facility) [integer; 1,1,I] Code for type of facility being
1 - Airport (a licensed facility)
2 - Landing Ground (other facilities)
3 - Heliport

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
featcode aircraft_flty
<tile-id>1 - Facility Type 1
<tile-id>4 - Facility Type 2 or 3

featcode aircrft_f_a
<tile-id>2

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol numbers applicable:
Point symbols;
701 : Airport (circle @ 250K)
703 : Landing Ground
708 : Heliport
0 : non printing for landing grounds on very small islands or helipads at 1:100000 where symbolisation can not occur do to rules set out in general notes

Polygon;
700 : Airport & Landing Ground (area @ 100K)

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology; 0
Attribute for point only.

ORIENTATION (orientation) [binary; 4,5,B] Orientation in whole degrees from East going anti-clockwise; 0 - 360
Attribute for point only. Features Aircraft facility type: Airport and Heliport have orientation of 0.

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features (see Section 3 chapter 5.15).
Attribute for point only.

General Notes

Only operational Aircraft Facilities found in the revision source material supplied for Aircraft Facilities and are clearly visible on imagery, will be included regardless of whether it was shown on/in the base material/digital data.

Only operational facilities will be shown. Abandoned facilities will not be shown.

The classification of facilities will be done according to the Enroute Supplement Australia published by the Airservices Australia and supplied as revision source material.

Only facilities shown as licensed in the Enroute Supplement are to be classified as airports. If the facility is not listed in the supplement or is listed as unlicensed it will be classified as a landing ground, with the feature and attribute reliabilities of the supplement or the base material/digital data respectively.

Only civilian licensed facilities will be named. Military facilities and unlicensed facilities will not be named.

Where an Aerodrome Reference Point (ARP) symbol is shown on the Enroute supplement diagram, the Aircraft facility point will be at the geographic coordinates given in the supplement. Where no ARP symbol exists in the Enroute supplement, the feature will be centred on the longest runway.

All runway centrelines for all licenced aircraft facilities will be captured.

Runway centrelines >457 metres (1500 feet) will be captured for unlicenced aircraft facilities.

At 1:100000 Helipads will be included within the boundaries of another Aircraft facility, a Builtup Area or a Park Polygon, however it will only be symbolised if space and cartographic generalisation permits.

At 1:250000 Helipads will be not be captured when they exist within the boundaries of another Aircraft Facility, Builtup Area or Park polygon.

At 1:100 000 Runways and Landing Grounds drawn to scale will be formed using parallel lines and should give the appearance of right angles at each end.

GEODATA

This feature will be shown as a point in the 1:250 000 product and a combination of polygon,chain and point in the 1:100 000 product (see section 1 chapter 3.8.10 Aircraft Facilities).

Map

For Landing grounds the orientation of the runway will be shown. If there is more than one runway the orientation of the main runway will be shown.

For named Aircraft Facilities, 'Airport' or 'Aerodrome' will be included in the name. The form used will be that used on the latest previous edition map. If the Aircraft Facility was not previously named 'Aerodrome' will be used.

Military aircraft facilities will be symbolised in the same way as civil facilities, but will not be named nor given any other indication of their military nature.

1:100 000:
All land airports and landing grounds will be drawn to scale with the landing strips or runways and taxiways outlined and correctly oriented. All polygon runways and landing grounds should have the appearance that they are formed using parallel lines and right angles at each end. All landing grounds will be labelled with a descriptive note "landing ground"

1:250 000:
For Airports the position, length and orientation of sealed runways will be shown. If there are no sealed runways, only the length and orientation of the main unsealed runway will be shown. See Runway centreline feature.

Data rules

The polygon feature will be bounded by an Aircraft facility line.

Related features

Aircraft facility line, Airport, Runway centreline, Taxiway and Tile edge

Related chapters

Section 1chapter 3.8.10
Section 3 chapters 3.2.4 and 5.9

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

AIRCRAFT FACILITY LINE

A line defining the limits of an airfield, airport or the edge of runways, taxiways or aprons.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	- / 40	
Feature code	aircrft_f_l	
Coverage (see Section 3 chapter 4)	z	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>1

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
702 : surrounding Aircraft Facility & Aircraft Facility Void Polygons
0 : surrounding Airport Polygons

General Notes

GEODATA

Map

Data rules

Bounds the Aircraft facility, Airport and Aircraft facility void polygons.

Related features

Aircraft facility, Aircraft facility void, Airport, Taxiway and Vegetation line

Related chapters

Section 1 chapter 3.8.10
Section 3 chapter 5.11.2

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

AIRCRAFT FACILITY VOID

A void in an Aircraft facility polygon.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:100 000

Feature Usage

GEODATA

Spatial object

Representation	Polygon	
Planimetric Accuracy	- / 9999	
Feature code	airc_f_void	
Coverage (see Section 3 chapter 4)	z	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>2

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
0

General Notes

GEODATA

Map

Data rules

Will be bounded by an Aircraft facility line.

Related features

Aircraft facility line and Tile edge

Related chapters

Section 1 chapters 3.8.2 and 3.8.10

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

AIRPORT

An area reserved for aircraft operations, excluding landing strips, runways and associated voids.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:100 000

Feature Usage

GEODATA

Spatial object

Representation	Polygon	
Planimetric Accuracy	- / 9999	
Feature code	airport_a	
Coverage (see Section 3 chapter 4)	z	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>2

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
0

General Notes

Abandoned airports will not be shown.

GEODATA

Map

Data rules

Will be bounded by an Aircraft facility line.

Related features

Aircraft facility, Aircraft facility line and tile edge

Related chapters

Section 1 chapter 3.8.10

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

ANNOTATION

Type that appears on the map.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

Map

Spatial object

Representation	Annotation	
Planimetric Accuracy		
Feature code		
Coverage (see Section 3 chapter 4)	5 and 6	

Data Attributes

GEODATA and working database

Working database only

Type size ($SIZE) Type point size as specified in Section 2 chapter 8 is 87.5 metres per point for 1:250 000 eg. where point size is 10 point, $SIZE will be 875. Type point size as specified in Section 2 chapter 9 is 35 metres per point for 1:100 000 eg. where point size is 10 point, $SIZE will be 350.

Text to be printed ($TEXT) This attribute will not include "\" (backslash characters)

Justification ($JUSTIFY) any legitimate ARC/INFO annoposition command option.

x coordinate offset ($OFFSETX) Any value in metres on the ground to give type a suitable position along the x axis.

y coordinate offset ($OFFSETY) Any value in metres on the ground to give type a suitable position along the y axis.

Font and colour of type ($SYMBOL) Valid entries; 6-11, 26-31, 36-41

Attributes which have standard values across all annotation are:
($ALIGN) null or LEFT
($FIT) OFF
($WORD) 0
($ID),($LEVEL) and ($RECNO) should not be required and may have any value

General Notes

The annotation feature class uses the ARC/INFO annotation feature type.

GEODATA

Map

Data rules

Type for large polygons and long linear features may be held in an annotation feature for each word to allow for spacing and differences in orientation, see Section 2 chapter 4. There are no subclasses for annotation. Annotation will appear only in the Cartographic Features, Graticule and Map Grid layers in the working database. The Cartographic Features, Graticule and Map Grid layers will not be built for annotation.

Related features

Feature pointer, Grid line, Graticule line, Kilometric distance indicator, Route marker - National and Route marker - State

Related chapters

Section 2 chapters 2.9, 3.1.1, 5, 6 and 7 Section 3 chapters 3.2.4, 5.2, 5.3 5.10, 6.9.1, 6.9.2 and 6.10.1 Appendix E Appendix F

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

AUXILIARY CONTOUR

A line augmenting relief presentation where significant topographic features are not shown by the prescribed contour interval. The line represents an imaginary line on the ground joining points of equal elevation in relation to the Australian Height Datum.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
5mm			

Scales

1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	- / 40	
Feature code	auxil_cont	
Coverage (see Section 3 chapter 4)	2	

Data Attributes

GEODATA and working database

ELEVATION (elevation) [number; 7,7,N,2] Elevation of contour in metres from the Australian Height Datum.

CONTOUR CODE (contour) [integer; 1,1,I] Type of contour;
1 - Standard
3 - Connector on cliff/cuttings/embankments/razorback
4 - Connector standard

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>3

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol numbers applicable:
59 - standard
0 - Connector on cliff/cuttings/embankments/razorback (non printing line)
0 - Connector standard (non printing line)

General Notes

GEODATA

Map

All auxiliary contours will be labelled with their elevation, where space permits.

Contours will be given symbol 0 where they cross Waterbodies such as Watercourse areas, Salt evaporators, Sewage ponds, Canal and Rapid areas to scale;
There will be no gap between the contour and the feature it is broken for.

Contours with a CONTOUR CODE attribute of 3 or 4 will not be shown on the map.

Data rules

Auxilary contours of different height must not touch each other or other contour features (in the c coverage).

No auxilary contour can cross itself, another auxilary contour or other contour features (in the c coverage)

Auxilary contours height must not equal a standard 20m contour interval at 1:100 000.

Auxilary contours will not be used to represent depressions.

Auxilary Contours cannot fall over Sea, Perennial lake, Reservoir or Open Cut mine.

Contours of code 3 will adhere to the rules in Section 3 chapter 6.1.1. These coincidence rules do not apply to contours of code 3 passing through cuttings and embankments.

Spot heights and Survey Marks must not contradict Auxilary contours.

Related features

Benchmark, Cliff, Horizontal control point, Hypsometric area, Razorback, Contour, Spot elevation

Related chapters

Section 1 chapter 3.6.5
Section 2 chapter 2.8

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

BENCH MARK

A permanently marked point, the elevation of which above sea level has been determined by levelling.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Point	
Planimetric Accuracy	100 / 40	
Feature code	bench_mark	
Coverage (see Section 3 chapter 4)	y	

Data Attributes

GEODATA and working database

ELEVATION (elevation) [number; 7,7,N,2] elevation in metres from the Australian Height Datum.

CODE (Code) [character; 24,24,C] Code which identifies the benchmark (to be populated if revision source material supplied). Alpha characters in this field are to be in the case used on the revision source material.

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>10

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
50

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology;
0

ORIENTATION (orientation) [binary; 4,5,B] Currently not used by symbology; 0

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

No new features will be added. Bench Marks currently existing in the 250K product will be retained.

The elevation will not be duplicated in the text_note field.

GEODATA

Map

Bench marks will be labelled ‘BM’ followed by the elevation to the nearest metre eg BM1902.

Data rules

Bench marks must fit logically with contours.

Related features

Contour, Horizontal control point and Spot elevation

Related chapters

Section 1 chapter 3.6.5

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

BOAT RAMP

A sloping construction to facilitate launching or retrieving vessels from water.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
1 mm			

Scales

1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	- / 40	
Feature code	boat_ramp	
Coverage (see Section 3 chapter 4)	h	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
755

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

GEODATA

Map

All boat ramps will be labelled with a descriptive note or named eg ‘boat ramp’.

Data rules

Related features

Related chapters

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

BORE

A small diameter hole in the ground for the purpose of obtaining subterranean water by natural flow or mechanical pumping.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Point	
Planimetric Accuracy	100 / 40	
Feature code	bore	
Coverage (see Section 3 chapter 4)	x	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] Bore name – for 100K use only

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

NAME (name) [character; 50,50,C] Bore name - for 250K use only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
11
0 (non printing) see map rules.

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology;
0

ORIENTATION (orientation) [binary; 4,5,B] Currently not used by symbology; 0

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

This feature will not be shown in densely settled regions as defined by Appendix C 'Fence and Water Facilities Guide' regardless of whether it was shown on/in the base material/digital data. Refer to Appendix C for more information on when to capture this feature.

At 1:100 000 in sparsely and moderately settled regions as defined by Appendix C 'Fence and Water Facilities Guide', size and any other selection criteria apply to all feature occurrences.

At 1:250 000 in sparsely and moderately settled regions as defined by Appendix C 'Fence and Water Facilities Guide', size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

Where a bore and a windpump are situated together, only the windpump will be shown as it usually has the greater landmark value. (Refer to entity Windpump).

GEODATA

Map

Names of these features will be shown.

Where a bore and a water tank are situated together, both will be included in the data but only the water tank will be shown as it usually has the greater landmark value. Bore should be symbolised to 0 (non – printing on the map face).

Bores plotted within 2.5 mm at map scale of a populated place will not be shown (symbolised to 0 non-printing).

When due to the density of general map detail, the symbols are omitted, a suitable note will be added, eg, 'numerous bores'.

Bores will mask all other detail except dry docks, kilometric distance indicators, route markers and annotation.

Data rules

Related features

Spring, Water tank and Windpump

Related chapters

Appendix C

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

BOUNDARY - INTERNATIONAL

Boundaries defining the territorial sovereignty of a country. The international boundary will be taken to be the line of sea bed jurisdictions.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	internat_l	
Coverage (see Section 3 chapter 4)	5	

Data Attributes

GEODATA and working database

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
62

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

All International boundaries will be shown.
See also feature class 'State Border'.

GEODATA

Map

The names of the Countries will be shown on the relevant side of the boundary as Annotation.

Data rules

Related features

State Border

Related chapters

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

BREAKWATER

A solid structure to break the force of the waves, sometimes detached from the coast, protecting a harbour or anchorage.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
1 mm			

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	breakwater	
Coverage (see Section 3 chapter 4)	h	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>1

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
751

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

GEODATA

Map

Features will be named if named on the latest previous edition map.

All breakwaters are to have an accompanying descriptive note eg ‘breakwater’

Data rules

Related features

Jetty, Sea wall and Wharf

Related chapters

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

BUILDING

A permanent walled and roofed construction or the ruin of such a construction.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		22500	140625

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Point	Polygon
Planimetric Accuracy	100 / 40	9999/9999
Feature code	building	building_a
Coverage (see Section 3 chapter 4)	g	i

Data Attributes

GEODATA and working database

BUILDING CODE (building) [integer; 1,1,I] Status of the building;
1 - Operational
2 - Ruin
3 - Abandoned homestead

BUILDING FUNCTION (function) [integer; 2,2,I] Function of Operational Building (if known);
1- Ambulance Station
2- Aged Care Facility
3- Community Centre
4- Day care centres/Kindergartens
5- Doctors Surgery
6- Fire Station
7- Historical Building
8- Hospital
9- Place of Worship
10- Police Station
11 -Power Station
12 -Public Hall
13- Refinery
14 -School
15 –Emergency Services Centre
16 -Shopping Centre
99- Other or Function Unknown

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4 - feat_code “building”
<tile-id>2 - feat_code “building_a”

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
Point symbols;
430 - Operational building & Abandoned homestead
41 – Ruin
40 – Significant Building
0 - non-printing

Polygon;
26 - Operational building & Abandoned homestead
0 - Ruin

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology; 0
Attribute for point only.

ORIENTATION (orientation) [binary; 4,5,B] Currently not used by symbology; 0
Attribute for point only.

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

The area criteria in the 'Minimum Size for Inclusion' box relates only to the building area feature code, not to building point features.

At 1:100 000 buildings captured from the base material/digital data will be shown unless there is strong evidence they no longer exist.

At 1:250 000 all feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

A new homestead may be shown by a single feature representing a group of buildings.

New buildings will be captured from supplied imagery where there is strong evidence on the image to support the interpretation or where other revision source material assists the interpretation.

Buildings will not be shown within Built-up areas. Buildings will be shown in Park, Cemetery and Built-up area void features.

The point entity will be used to represent the location of a group of buildings as well as an individual building. However, individual buildings will be shown as far as the scale permits.

A group of buildings that cannot be shown individually may also be shown by a representative pattern of building features. A group of buildings will not be aggregated to form a building drawn to scale.

Significant buildings should have landmark value. It is not intended that farm or poultry sheds would be considered significant, particularly in areas where there are many such features. Some examples of significant buildings may be: power stations, hospitals, oil refineries. In remote areas features may take on more significance than in populated centres for example: large roadhouses, paper mills, etc. A significant building such as a papermill that cannot be drawn to scale will be shown using symbol 40.

At 1:100 000 operational buildings of known function should be populated with a building function code. Buildings whose function is not known or not in the numbered list should be coded as "other or function unknown". Text_notes should reflect the function of the building.

Building polygons will be cloned as building point features.

At 1:250 000 the building item for building area features is a working database only item.
At 1:100 000 the building item for building area features is a GEODATA and working database item.
At both scales the building item for building point features is a GEODATA and working database item.

GEODATA

Named buildings other than operational homesteads will be cloned as Localities coded as place name. The name will be held against the Locality and not as a text note for building.

Operational homesteads will be shown as localities and cloned as a building subject to the rules for inclusion of homesteads. Operational homesteads that fail the rules for inclusion as Locality homesteads may still be shown as unnamed buildings. Abandoned homesteads will be shown as buildings of building code 3 and will named in a similar manner to the method of capture of locality homesteads (code 4) in reference to Appendix C. (i.e In densely settled areas locality code 4 homesteads are not captured unless considered significant (e.g. historical) therefore buildings of code 3 Abandoned Homesteads should not be named in densely settled regions unless they are also considered significant).

At 1:250 000 building polygons will not be included in GEODATA. All buildings will be represented as points. Building polygons will be included at 1:100 000.

Map

The building symbol will be aligned parallel to the map grid.

If black type falls unavoidably over the building symbol, the feature's symbol attribute will be '0' (non-printing).

Buildings other than homesteads will be named or labelled where they have a distinctive function, eg. 'factory', 'sawmill', 'Wikipin Agricultural College', or where they were labelled on the latest previous edition map.

Operational homesteads will be shown by the feature class Locality code 'Homestead' subject to the rules for inclusion of homesteads. Abandoned homesteads and operational homesteads that fail the rules for inclusion as Locality homesteads may still be shown as buildings.

All ruins will be labelled 'ruin'. Abandoned homesteads will be labelled 'abandoned'.

Data rules

Operational Buildings, Ruins etc shown to scale will be bounded by a Building Line feature at 1:250 000 and a Cultural Area Line at 1:100 000.

The text_note attribute field will be used as required for adding descriptions or names to buildings which have a distinctive function.

Related features

Building line, Landmark Point, Locality (homestead), Locality (place name) and Tile edge

Related chapters

Section 2 chapter 2.2.3
Section 3 chapters and 6.5.2

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

BUILDING LINE

A line defining the limits of a building large enough to show to scale.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000

Feature Usage

Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / -	
Feature code	building_l	
Coverage (see Section 3 chapter 4)	i	

Data Attributes

GEODATA and working database

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
0 - Operational building
60 - Ruin

General Notes

GEODATA

Only applicable for GEODATA at 1:100 00 scale. See building & Cultural Area Line.

Map

Data rules

Bounds a building shown to scale at 1:250 000.

Related features

Building, Built-up area line, Cultural Area Line and Vegetation line

Related chapters

Section 3 chapter 5.11.2

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

BUILT-UP AREA

An area where buildings are close together and have associated road and other infrastructure networks.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		62500	390625

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	builtup_a	
Coverage (see Section 3 chapter 4)	b	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] Name of the built-up area

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>2

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14).

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
420

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features (see Section 3 chapter 5.15).

General Notes

A built-up area will include all buildings which are set out on street patterns and which are too close to be shown using individual symbols at map scale.

Dual carriageways, highways/principal roads and secondary roads will be shown through Built-up areas. The selection of minor roads within Built-up Area varies according to scale. (See Road)

Areas of open space which are not parks and have an area greater than 390625 square metres at 1:250 000 and 62500 square metres at 1:100 000 will be excluded from the built-up area.

In some instances, parts or suburbs of a town or city may be split from the main body of the built-up-area by open land or a double sided stream, in which case the separate built-up area polygons will carry the same name, eg ‘Melbourne’ which may be attached to a number of built-up area polygon features.

Built-up area names will be as listed for the census. Where names have been combined for the census (eg hyphenated) they will be combined unless separate populations are given for the components in which case the components will be named seperately.

Unless they are disconnected sections of a larger area, Built-up areas less than 390625 sq m. at 1:250 000 or 62500 sq m. at 1:100 000 will be represented by a Locality feature with a code of place name or populated place (see Locality).

GEODATA

The paracentroid of the polygon has no positional meaning, ie, it does not indicate the CBD, GPO or any other point considered the focus of that built-up-area.

The name of the built-up area will be attached to the paracentroid of the built-up area. Names of suburbs of a city or town will be included as separate Locality features with the code place name.

Map

Built-up areas will be named.

Built-up areas will mask contours.

Data rules

Built-up areas will be bounded by a built-up area line feature.

Built-up area features cannot overlap Built-up Area Void, Park, Lake, Watercourse Area, Canal Area, Mangrove, Mangrove Flat, Reservoir, Land Subject to Inundation and Sea features.

Related features

Built-up area line, Kilometric distance indicator, Locality (populated place), Locality (place name) and Tile edge

Related chapters

Section 3 chapter 6.5.1
Section 3 chapter 6.7.3

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

BUILT-UP AREA LINE

The bounding line of a Built-up-area, Built-up area void, park, cemetery or rubbish tip polygon.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	builtup_l	
Coverage (see Section 3 chapter 4)	b	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>1

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Note: The Built-up area line feature can bound various polygon types & will have its symbol number changed accordingly. The symbol numbers shown apply to Built-up lines bounding the following features.

Line symbol ;	*Polygon area bounded;*
0	*Built-up area (non printing line)*
0	*Park area (non printing line)*
170	*Rubbish tip (@1:100K)*
60	*Cemetery*

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features (see Section 3 chapter 5.15).

General Notes

GEODATA

Map

Symbols 170 (bounding Rubbish tip) and 60 (bounding Cemetery) will be masked out by symbolised linear features such as roads.

Symbols 170 (bounding Rubbish tip) and 60 (bounding Cemetery) will be masked where black type unavoidably overprints the feature. The break measurement will be 0.2mm on either side of the type where it crosses the feature. (Note: the feature will be masked only on the map and will be complete in the data).

Data rules

Built-up area lines bound built-up areas, built-up area voids, cemeteries, parks and rubbish tips.

Where a built-up area line is within 50 meters at 1:250 000 and 20 meters at 1:100 000 of and runs alongside the following features it will be coincident with the other feature:
Waterline
Sea wall
Building line
Cultural Area Line
Offshore line
Road
Railway
Prohibited area line
Reserve area line
Vegetation line

Related features

Building line, Built-up area, Built-up area void, Cemetery, Offshore line, Park, Prohibited area line, Railway, Reserve line, Road, Rubbish tip, Sea wall, Vegetation line and Waterline

Related chapters

Section 3 chapters 5.11.2 and 5.11.3

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

BUILT-UP AREA VOID

An empty or void area in a Built-up area, Park or Cemetery polygon which is not occupied by a Park or a Cemetery feature.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		62500	390625

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	bua_void	
Coverage (see Section 3 chapter 4)	b	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>2

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
0

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features (see Section 3 chapter 5.15).

General Notes

Areas of open space which are not parks and have an area greater than 390625 square metres at 1:250 000 and 62500 square metres at 1:100 000 will be excluded from the built-up area.

This feature will complete voids in builtup area left by Lake, Watercourse Area, Canal Area, Mangrove, Mangrove Flat, Reservoir, Land Subject to Inundation. As well as completing voids in Park left by Aeronautical Areas. When used for this purpose the minimum size will be that of the feature that creates the void. For example 62 500 sq m at 1:250 000 and 10 000 sq m at 1:100 000 if the void is created by a new lake.

GEODATA

Map

Data rules

Built-up Area Void features cannot overlap Built-up Area and Park features.

Related features

Built-up area line, Cemetery, Park, Rubbish tip and Tile edge

Related chapters

Section 1 chapter 3.8.2

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

CANAL

An artificial watercourse conveying water for inland navigation, irrigation or drainage purposes.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
5 mm		50000	312500

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	Polygon
Planimetric Accuracy	100 / 40	9999/9999
Feature code	canal	canal_a
Coverage (see Section 3 chapter 4)	d	w

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] Canal name

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4 - feat_code “canal”
<tile-id>5 - feat_code “canal_a”

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol numbers applicable:
947 (line)
10 (polygon)

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features

old_ufi will only be an attribute for canal chains.

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

When a new undersized length of canal exists between two water pipelines which meet their selection criterion, then the section of canal should be represented as a pipeline feature, accepting

the attributes of its adjoining pipelines.

Features plotted wider than 1.0 mm to scale will be shown as polygons.

Canals do not carry perenniality or hierarchy attributes.

GEODATA

Map

Canals will be masked for roads. The break will be the same as the width of the road it crosses. If not included in the name canals will have a descriptive note eg ‘canal’, ’drain’.

Data rules

Waterlines and Junctions bound canal polygons.

Polygon canals cannot overlap Built-up or Vegetation areas.

Connectors will be placed through polygon canals to complete stream networking.

With respect to contours, only standard connectors can cross polygon canals.

The following cannot overlap or fall within polygon canals;
Spot elevations, Localities, any morphology coverage features any waterpoint coverage feature, Windbreaks, Horizontal control points, Bench marks, Aircraft facilities and Sea.

Related features

Connector, Junction, Salt evaporator, Salt evaporator internal line, Tile edge, Watercourse and Waterline

Related chapters

Section 1 chapters 3.8.3 and 3.8.4
Section 2 chapter 2.2.3

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

CAVE

The mouth of a naturally formed, subterranean open area or chamber.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Point	
Planimetric Accuracy	100 / 40	
Feature code	cave	
Coverage (see Section 3 chapter 4)	m	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

NAME (name) [character; 50,50,C] The Cave's name

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable :
96

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology;
0

ORIENTATION (orientation) [binary; 4,5,B] Currently not used by symbology;
0

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

Only caves shown on the base material/digital data or the latest previous edition map (if provided) will be shown.

This feature will be used to represent the location of an individual cave as well as groups of caves.

GEODATA

Named caves will be cloned as localities with locality code 10 (Place name)

Map

Caves will be named where they were named on the base material/digital data or the latest previous edition map. All caves are to have an accompanying descriptive note 'cave', ‘sinkhole’, etc. unless the word ‘cave’, ‘sinkhole’, etc. is included in the name.

Data rules

Caves cannot fall within the following polygons; Lakes, Reservoirs, Watercourses, Canals, Buildings and Offshore coverage polygons other than voids.

Related features

Related chapters

Section 3 chapter 5.11.1

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

CEMETERY

An area of land for burying the dead

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		22 500	140 625

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	100 / 40	
Feature code	cemetery	
Coverage (see Section 3 chapter 4)	b	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] Cemetery name

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>2

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
0

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

Named features whose area is less than the minimum size for inclusion shall be shown as Localities coded cemetery.

See Locality

Cemeteries to scale can be surrounded by built-up areas or can be isolated polygons.

GEODATA

Map

All cemeteries are to have an accompanying descriptive note 'cemetery' unless the word ‘cemetery’ is included in the name.

Data rules

Cemeteries to scale are bounded by built-up area line. Cemeteries cannot appear in or overlap the following polygons; Lakes, Reservoirs, Watercourses, Canals, Buildings and Offshore coverage polygons other than voids.

Related features

Built-up area line, Built-up area void, Locality and Tile edge

Related chapters

Section 3 chapter 6.5.5

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

CLIFF

A high, steep, significant or overhanging face of rock.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
5 mm			

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	cliff	
Coverage (see Section 3 chapter 4)	m	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
924
0 - non-printing - see Map rules

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

Height of high cliffs and escarpments are to be indicated by the use of spot elevations where available.

Geological faults will be shown as cliffs when there is a relative vertical displacement of the land mass at the fault.

GEODATA

Map

Contours & Auxiliary Contours will be broken for cliffs.

Coastal cliffs will be treated in the same way as inland cliffs. Coastline (Waterline feature) will be non-printing (symbol 0) where cliff and waterline symbols overlap, disregarding the ticks on cliff symbols. A cliff will be symbolised to 0 a maximum of 0.8 mm either side of the location point of a lighthouse or horizontal control point symbol where the symbol touches the cliff.

No differentiation will be made between cliffs and escarpments.

Cliffs will be named where named on the latest previous edition map unless adjacent development means this would lead to clutter.

Cliff symbols will be masked where black type unavoidably overprints the feature. The break measurement will be 0.2 mm on either side of the type where it crosses the feature. (Note: the feature will be masked only on the map and will be complete in the data.)

Data rules

The feature shall be digitised such that the down hill side is on the left going from start node to end node.

Cliffs cannot appear in;
Sea, Lakes, Reservoirs, Building Area and Offshore polygons.

Cliffs cannot intersect Roads and Railways.

Related features

Auxiliary Contour, Contour, Lighthouse, Razorback, Waterfall and Waterline

Related chapters

Section 3 chapters 5.7 and 6.1.1

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

CONNECTOR

An artificial line used to connect linear Hydrographic features across an area feature to allow network analysis of riverine networks.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA

Spatial object

Representation	Chain	
Planimetric Accuracy	9999 / 9999	
Feature code	connector	
Coverage (see Section 3 chapter 4)	d	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] Name of associated watercourse

PERENNIALITY (perennial) [integer; 1,1,I] Code for perenniality;
0 - Not Applicable
1 - Perennial
2 - Non-perennial

HIERARCHY (hierarchy) [integer; 1,1,I] Importance of associated watercourse
0 - Not Applicable
1 - Major
2 - Minor

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>2

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
0

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features (see Section 3 chapter 5.15).

General Notes

GEODATA

Where a connector joins two canals, or joins a canal to another connector it will have a perenniality of '0' and a hierarchy of '0'. A connector joining a canal to a stream will take the perenniality of the stream. See Section 1 3.8.3

Map

Data rules

Connectors must fall wholly within waterbodies except where there is evidence that a loss in hydrological connectivity would occur eg. a connector may be used to duplicate a water pipeline to provide hydrological connectivity. Such a connector may also be used in areas where a watercourse feature flows underground and re-emerges.

The number of vertices used to define connectors should be sufficient only to keep it well within the waterbody area.

Connectors may be used through all waterbodies except Mangrove Flat, Waterbody Voids, Salt Evaporators and Settling ponds. An exception is where a watercourse ends at a Mangrove Flat and there is no channel to the sea. In this case a connector may cross a mangrove flat.

If there is no flow through the waterbody then no connector feature will be added.

Connectors will carry the attributes of the watercourse they represent ie. the classification and perenniality shown in the supplied Water Guide in Appendix D (see Section 1, chapter 3.8.3).

Connectors will be used to extend the stream network to the coastline where applicable.

It is preferable that the ends of connectors are positioned perfectly over a node or vertice in the underlying waterbodies perimeter, and at worst should fall within 1 metre of the features perimeter line.

Connectors will not be shown around both sides of an island. That is, only one main connector will appear, with associated tributary connectors coming in from one or both sides.

Connectors will pass through Reservoirs to connect to the Spillway linear feature.

Related features

Canal, Junction, Lake, Land subject to inundation, Lock, Mangrove, Marine swamp, Rapid, Reservoir, Spillway, Swamp, Watercourse and Waterhole

Related chapters

Section 1 chapters 3.8.3 and 3.9.1
Section 3 chapters 5.11.2, 5.11.3 and 6.10.1

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

CONTOUR

A line which represents an imaginary line on the ground joining points of equal elevation in relation to the Australian Height Datum.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	contour	
Coverage (see Section 3 chapter 4)	c	

Data Attributes

GEODATA and working database

ELEVATION (elevation) [number; 7,7,N,2] Elevation of contour in metres from the Australian Height Datum.

CONTOUR CODE (contour) [integer; 1,1,I] Type of contour;
1 - Standard
2 - Depression
3 - Connector on cliff/cuttings/embankments/razorback
4 - Connector standard
5 - Interpolated contour

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>3 - contour code <= 3
<tile-id>8 - contour code >= 4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol numbers applicable:
56 - Standard
55 - Index standard
58 - Standard depression
57 - Index depression
0 - Connector on cliff/cuttings/embankments/razorback (non printing line)
0 - Connector standard (non printing line)
0 - 0 elevation contour when cloned from Waterlines, Junctions and other features forming the coastline.

Interpolated contours;
These may or may not be printed on the map, according to requirements. Use 0 for non printing lines, and the appropriate class symbol no. above for printable lines.

General Notes

See Section 3 chapter 6.1.

GEODATA

Map

Contours will be given symbol 0 where they cross Waterbodies such as Watercourse areas, Salt evaporators, Sewage ponds, Canal and Rapid areas to scale;
There will be no gap between the contour and the feature it is broken for.

Contours with a CONTOUR CODE attribute of 3 or 4 will not be shown on the map.

For depression contours the ticks will be on the downhill side of the line.

Contours with a CONTOUR CODE attribute of 5 will be shown on the map where the contours were previously deleted from symbols such as highway shields and the new symbols are smaller on the revised map or shown in a different location. In some instances contours were unnecessarily deleted well before cliff symbols or broken for sand ridges. These contours should also be interpolated and shown on the map, provided they do not run into each other.

Where contours in steep terrain were deleted from previous maps to avoid them running into each other, they must be interpolated to close the Hypsometric polygons but they should not print ie they will be given symbol 0.

Data rules

Contours of different height must not touch each other. No contour can cross itself, another contour or an auxiliary contour.

The Standard contour interval is 20m (1:100 000) and 50m (1:250 000).

Depression contours shall be digitised such that the downhill side is on the left going from start node to end node.

Waterline, Junctions & other features forming the coastline will be cloned as 0 (zero) elevation contours. The 0 contour will have a CONTOUR CODE of 1 except where there are coastal cliffs in which case it will have a code of 3 or where it is cloned from a junction in which case it will have a code of 4.

One contour is to be shown at each contour interval height.
At 1:250 000 no intermediate contours shall be used. At 1:100 000 intermediate contours may be shown using the feature ‘Auxilary Contour’.

Contours will carry the Symbol code for Index contours at every 100m (1:100 000) & 250m (1:250 000) taken from elevation 0.

Contours of code 3 will adhere to the rules in Section 3 chapter 6.1.1. These coincidence rules do not apply to contours of code 3 passing through cuttings and embankments.

No gaps should appear in contours.

Contours cannot fall over Sea, Perennial lake and Reservoir polygons.

Benchmarks, Spot heights and Survey Marks must not contradict contours.

Related features

Auxiliary Contour, Benchmark, Cliff, Horizontal control point, Hypsometric area, Junction, Razorback, Sea wall and Waterline

Related chapters

Section 1 chapter 3.6.5 Section 2 chapter 2.8 Section 3 chapters 5.7 5.11.1 and 6.1

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

CONVEYOR

A continuous belt or series of belts mounted on rollers and used to move large quantities of goods, especially grain or ore.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
3 mm			

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	conveyor	
Coverage (see Section 3 chapter 4)	u	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
183

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

Conveyor features inside built-up areas will not be shown.

GEODATA

Map

All conveyors are to have an accompanying descriptive note 'conveyor' unless the word ‘conveyor’ is included in the name.

Conveyors will be masked where black type unavoidably overprints the feature. The break measurement will be 0.2 mm on either side of the type where it crosses the feature. (Note: the feature will be masked only on the map and will be complete in the data.)

Data rules

Related features

Aerial Cableway

Related chapters

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

CRATER

A bowl shaped natural depression with steep slopes at the rim, formed by volcanic activity or meteor impact.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		10000	62500

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	crater	
Coverage (see Section 3 chapter 4)	q	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>5

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

NAME (name) [character; 50,50,C] The crater's name

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
0

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

Crater polygons will extend to the top of the crater rim.

GEODATA

Map

See relief area line All craters are to have an accompanying descriptive note 'crater' unless the word ‘crater’ is included in the name.

Data rules

Craters will be bounded by a Relief area line feature. Crater features cannot overlap Sea polygons. The crater perimeter cannot cross the perimeter of other relief area features.

Related features

Relief area line and Tile edge

Related chapters

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

CULTURAL AREA LINE

A line defining the limits of either a building large enough to show to scale or a Landmark area.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	- / 40	
Feature code	cultural_a_l	
Coverage (see Section 3 chapter 4)	i	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>1

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
0 - Operational building
60 – Ruin
63 –Landmark Area

General Notes

GEODATA

See building.

Map

When a Landmark Area and Ruin to Scale are adjacent then the ruin boundary symbology should take precedence. When a Landmark Area or Ruin to Scale is adjacent to an operational building then the symbology for Landmark Area or Ruin to Scale should take precedence.

Data rules

Bounds a building shown to scale & Landmark Area.

Related features

Building, Built-up area line and Vegetation line & Landmark Area , Building Line

Related chapters

Section 3 chapter 5.11.2

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

CUTTING

An open excavation of the Earth's surface to provide passage for a road, railway, canal or similar entity.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
2 mm	½ contour int.		

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	cutting	
Coverage (see Section 3 chapter 4)	m	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
923

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

The linear feature for which the cutting was made need no longer exist, eg a dismantled railway line.

A cutting may be either on one side of the linear feature (or its former position) or may be paired with a second cutting on the other side. The combination of a cutting on one side and an embankment on the other is permissible.

GEODATA

Map

Data rules

A Cutting feature represents the bottom of the cutting entity. The feature will always be oriented so that the upslope will be on the right going from start node to end node.

Cuttings can not cross the feature for which the cutting was created or other Roads, Railways, Canals, Watercourses, Dam or other Morphology coverage features.

Cuttings cannot appear in Sea, Lakes, Reservoirs, Watercourse, Canal and Building Area polygons.

Related features

Embankment

Related chapters

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

DAM

A barrier of earth and rock, concrete or masonry constructed to form a reservoir for water storage purposes or to raise the water level.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
1 mm			

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	dam	
Coverage (see Section 3 chapter 4)	u	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The Dam's name.

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>1

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
925 - for normal dam
0 - where coincident with Road on dam.

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

Dams will not be shown where the associated water storage is shown as a Water tank feature.

Dams not shown to scale on the latest previous edition map will be captured as a chain 1mm long at map scale.

Dam features will be associated with a spillway feature where the spillway is behind the wall or separated from it and meets other selection criteria for spillways. Where excess water overtops the dam wall along all or most of its length a spillway will not be shown e.g. Hume Dam or Scrivener Dam (see Spillway).

In densely and moderately settled regions as defined by Appendix C where a Dam wall meets the minimum size criteria, the attached reservoir should be shown regardless of whether or not it is below the minimum size criteria for reservoirs. If a reservoir no longer exists (ie. Filled with sediment) then the dam wall will not be shown.

GEODATA

Where a spillway feature is not included (see Spillway), the reservoir connector and watercourse or watercourse connector will meet node to node at the dam.

Map

Where the dam carries a road the dam will be symbolised as a road on dam. See feature class Road on dam.

If a dam wall and its associated reservoir have the same name, then :
- where the name of the reservoir can be placed on the map face in a cartographically acceptable manner the associated dam wall name will not be included but a descriptive note e.g. 'dam','weir' will be added where space permits.
- where the reservoir name can not be placed on the map face in a cartographically acceptable manner then the waterbody feature will remain unnamed but its associated dam wall would be named, where the name is known. It should also have an accompanying descriptive note e.g. 'dam', 'weir' unless the word 'dam','weir' is included in the name.

Data rules

Dams that carry roads across them will be cloned to the roads cover as a Road on dam feature.

Dams cannot cross any drainage coverage feature (excepting Watercourse chains and connectors) or Roads and Railways.

Dams cannot appear in the following; Sea, Lakes, Canal, Watercourse and Building Area polygons.

Related features

Reservoir, Road on dam, Spillway and Water tank

Related chapters

Section 3 chapters 3.2.4 and 5.11.1

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

DISTORTED SURFACE

An area over which vehicular movement is difficult or impossible due to the fractured nature of the ground, or rock debris lying on the surface.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		62500	390625

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	dist_surf	
Coverage (see Section 3 chapter 4)	q	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>5

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
90
TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

Polygons that form clusters may be represented by one large polygon if the individual polygons that constitute the cluster are smaller than the minimum size for inclusion.

This feature can include distinctive broken country characterised by fractures, joints, faults, gilgai, or broken stone.

GEODATA

Map

See Relief area line.

All distorted surfaces are to have an accompanying descriptive note, eg 'gilgai', ‘lava flow’.

Data rules

Distorted surface polygons will be bounded by a Relief area line feature.

Where the boundary of an area of Distorted Surface has a similar shape to another natural feature such as a cliff, the relevant section of Relief Area Line will be made coincident with this other feature (see Relief Area Line).

Distorted surfaces can not appear in or overlap Sea, Lake, Watercourse area, canal area or reservoir polygons. Distorted surfaces can not overlap other relief area coverage polygons.

Related features

Relief area line and Tile edge

Related chapters

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

DRY DOCK

A structure or basin providing support for a vessel and from which water can be removed so that the bottom of the vessel is exposed.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		22500	

Scales

1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Point	
Planimetric Accuracy	- / 40	
Feature code	dry_dock	
Coverage (see Section 3 chapter 4)	u	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The Dry dock's name.

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
753

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology; 0

ORIENTATION (orientation) [binary; 4,5,B] Currently not used by symbology; 0

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

GEODATA

Map

All dry docks are to have an accompanying descriptive note 'dry dock' unless the word 'dry dock' is included in the name.

Dry Docks will mask all other detail except route markers, kilometric distance indicators and annotation.

Data rules

Dry Docks must appear over the sea or waterbody features. ie. they cannot appear over land.

Related features

Related chapters

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

EMBANKMENT

An artificial bank of earth and or stone built above the natural surface.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
2 mm	½ contour int.		

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	embankment	
Coverage (see Section 3 chapter 4)	m	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
31

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

The linear feature for which the embankment was made need no longer exist, eg a dismantled railway line.

An embankment may be either on one side of the linear feature (or its former position) or may be paired with a second embankment on the other side. The combination of an embankment on one side and a cutting on the other is permissible.

GEODATA

Map

Data rules

An embankment feature represents the top of the embankment entity. The feature will always be oriented so that the downslope will be on the right going from start node to end node. Embankments can not cross the feature for which the embankment was created or other Roads, Railways, Canals, Watercourses, Dam or other Morphology coverage features. Embankments cannot appear over the following; Sea, Lakes, Reservoirs, Offshore and Building Area features.

Related features

Cutting and Levee

Related chapters

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

FEATURE POINTER

A symbol used to graphically link text to a feature where the density of detail may result in ambiguity.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

Map

Spatial object

Representation	Chain	
Planimetric Accuracy	9999 / 9999	
Feature code	pointer	
Coverage (see Section 3 chapter 4)	5	

Data Attributes

GEODATA and working database

Working database only

SYMBOL (symbol) [binary; 4.0]
Symbol number applicable:
265

General Notes

Use to identify the feature to which a name or descriptive note refers in areas of dense detail. See Section 2 chapter 5.3 rule 6.

To be used only where a feature such as a small polygon must be named or labelled and the name or label can not be placed without ambiguity.

The use of this feature is to be kept to a minimum.

GEODATA

Map

Data rules

Feature pointers will be digitised such that the start node is near the annotation and the end node is near the feature being indicated.

Related features

Annotation

Related chapters

Section 2 chapter 5.3

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

FENCE

A structure which encloses, bounds or divides a property or part thereof. Includes vermin proof fences.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
10 mm			

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	Fence	
Coverage (see Section 3 chapter 4)	u	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
927
0 Where a vermin proof fence follows a state border or road.

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 this feature will only be shown in sparsely settled regions as defined by Appendix C 'Fence and Water Facilities Guide'. The exception is that major vermin proof fences will be shown in all locations. Size and any other selection criteria apply to all feature occurrences.

At 1:250 000 this feature will only be shown in sparsely settled regions as defined by Appendix C 'Fence and Water Facilities Guide', regardless of whether it previously existed in the base Series 2 data. The exception is that major vermin proof fences will be shown in all locations. Size and any other selection criteria apply to new feature occurrences. All vermin proof fences and feature occurrences in sparsely settled regions existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

Fences around small paddocks adjacent to farm houses and homesteads will be omitted.

Fence features less than 10 mm in length may be used to depict yards greater than 2.5 mm x 2.5 mm at map scale - refer feature 'Yard'.

Where a vermin proof fence follows a state border or a road (excluding Vehicle Tracks), the fence feature should be symbolised to 0 (non-printing) and the text_note 'vermin proof fence follows state border' or 'vermin proof fence follows road' should be applied.
Where a vermin proof fence and a vehicle track are adjacent, an assessment must be made as to whether

- The vehicle track is considered important in terms of road network connectivity; and/or
- The vehicle track is servicing a natural or cultural feature, excluding the fence, represented within the new topographic map and data product eg. Tower, mine, spring, etc.

If the track is deemed important, show the track, add the text_note 'vermin proof fence follows track' and symbolise vermin proof fence to 0. If not, the track should not be included in the data and a text_note 'track follows vermin proof fence' should be added to the fence feature shown on the map.

All of the above text_notes should be applied to the features in the utilities coverage.

Where a fence follows a road (excluding vehicle tracks) the fence should not be included in the data.
Where a fence and a vehicle track are adjacent, an assessment must be made as to whether:

- The vehicle track is considered important in terms of road network connectivity ; and/or
- The vehicle track is servicing a natural or cultural feature, excluding the fence, represented within the new topographic map and data product eg. Tower, mine, spring, etc.

If the vehicle track meets either of the above criteria then the vehicle track should be shown on the map, in accordance with the specifications. Alternatively, if the vehicle track does not meet either of the above criteria then the fence should be shown, provided it adds a meaningful connection to the existing fence network. These guidelines apply to both features existing on the previous edition maps and new features and are subject to Appendix C rules regarding fence selection.

GEODATA

Map

Vermin proof fences will have an accompanying descriptive note eg 'vermin proof fence'.

Fences will be masked by gate stock grid and yard symbols and by roads.

Fences will be masked where black type unavoidably overprints the feature. The break measurement will be 0.2 mm on either side of the type where it crosses the feature. (Note: the feature will be masked only on the map and will be complete in the data.)

Data rules

Fences cannot overlap;
Sea and Building area features.

If the fence feature crosses other utilities features a node will be shown at the intersection point. ie. the arcs will be split.

Related features

Gate, Stock grid and Yard

Related chapters

Section 3 chapter 5.11.2
Appendix C

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

FERRY ROUTE

A route across a river, lake, reservoir or sea used by a vessel for the regular transport of vehicles or passengers from one terminal point to another.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	9999 / 9999	
Feature code	ferry_route	
Coverage (see Section 3 chapter 4)	v	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The name of the ferry service.

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>2

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
20

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features (see Section 3 chapter 5.15).

General Notes

At 1:100 000 All feature occurances existing in the base material/digital data will be retained unless there is clear evidence they no longer exist. Revision source material will be provided for ferry routes to be shown.

At 1:250 000 All feature occurances existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist. Revision source material will be provided for new ferry routes to be shown.

Only operational ferry routes will be shown. If a ferry route is not part of the road network, ie the ferry does not carry vehicles, the route will only be shown if it is longer than 3 mm at map scale.

Trans- Tasman and other long distance Ferry routes will be shown.

GEODATA

Ferry routes that form part of the road network will connect to the road network.

Map

All ferry routes, including those not symbolised, are to be labelled 'ferry'.

Where a Ferry route crosses the edge of the map a note will be placed along the route close to the edge giving the main destination eg 'Sydney to Devonport.'

Data rules

Ferry Routes will have as their starting point the appropriate terminating point of Road or Rail features. That is, the end node of the Road/Railway will be a shared node used for the starting point of the Ferry Route. This is required to ensure network connectivity.

Where one Ferry Route crosses another Ferry Route or overhead bridge a node will be shown at their intersection point. ie. the arcs will be split.

Ferry Routes will only appear over; Rivers, Lakes, Reservoirs and Sea area features.

Related features

Railway and Road

Related chapters

Section 3 chapter 3.2.4

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

FLOW DIRECTION ARROW

A symbol used to indicate the direction of flow of water through a river system where it is unclear using the topological relationships shown on the map face.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:100 000

Feature Usage

Map

Spatial object

Representation	Point	
Planimetric Accuracy	9999	
Feature code	flow_direct	
Coverage (see Section 3 chapter 4)	5	

Data Attributes

GEODATA and working database

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
948

ORIENTATION (orientation) [binary; 4,5,B]
Orientation in whole degrees from East going anti-clockwise; 0-360

General Notes

The flow direction arrow will be used for the last chain of watercourses which dissipate and where the direction of flow may be unclear. The flow direction arrow must be coincident with the node at the downstream end of the feature. No direction of flow arrow will be added when a watercourse symbol stops in a swamp, or where direction of flow can be reasonably determined from the interpretation of the topography at 1:100 000.

The flow direction arrow should be orientated so it appears that the stream connects directly through the centre of the arrow symbol (e.g. approximately 30 degrees should exist between each branch of the arrow and the drainage centreline.) See symbol dictionary for example.

GEODATA

Map

Data rules

Related features

Watercourse

Related chapters

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

FOOT BRIDGE

A structure erected over a depression or obstacle to carry foot traffic.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
1 mm			

Scales

1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	- / 40	
Feature code	foot_bridge	
Coverage (see Section 3 chapter 4)	v	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The name of the foot track on which the bridge is located.

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
268

General Notes

GEODATA

Map

Data rules

Foot bridges will meet with a foot track. The start and end points of the bridge must fall exactly on the node at the respective ends of the foot track.

Related features

Foot track

Related chapters

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

FOOT TRACK

A track designed to carry pedestrian traffic only.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
5 mm			

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	foot_track	
Coverage (see Section 3 chapter 4)	v	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The name of the foot track.

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
22

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:250 000 details of foot tracks to be included will be supplied, only tracks of national significance will be included.

At 1:100 000 scale popular scenic / tourist foot or bridle paths will be shown.

Foot tracks will only be shown where they do not follow roads or vehicle tracks shown on the map.

GEODATA

Map

Foot tracks are to have an accompanying descriptive note 'foot track' unless ‘foot track’ or an equivalent term is included in the name.

Where the position of new foot tracks can not be verified on the imagery or other revision source material they are to be labelled ' (position approximate)'

A descriptive note may be added on the map where a Foot track is not included because it follows a road, for example ‘Hume and Hovell Walking Trail follows track’.

Foot tracks will be masked where black type unavoidably overprints the feature. The break measurement will be 0.2 mm on either side of the type where it crosses the feature. (Note: the feature will be masked only on the map and will be complete in the data.)

Data rules

Related features

Foot bridge

Related chapters

Section 3 chapter 3.2.4

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

FORD

A shallow or flat portion of the bed of a watercourse or lake where a crossing may be effected.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	Point
Planimetric Accuracy	100 / 40	100 / 40
Feature code	ford_l	ford_p
Coverage (see Section 3 chapter 4)	v	v

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The name of the road on which the ford is located.

CLASSIFICATION (class) [Integer; 1,1,I] The road's classification;
1 - Dual Carriageway
2 - Principal Road
3 - Secondary Road
4 - Minor Road
5 - Track

FORMATION (formation) [integer; 1,1,I] Type of road surface;
1 - Sealed
2 - Unsealed
3 - Unknown
4 - Under construction

NATIONAL ROUTE NUMBER (NRN) [character; 12,12,C] The national route number/s assigned to the road (if multiple numbers, delimited by a minus sign). Alpha characters in this field are to be in upper case.

STATE ROUTE NUMBER (SRN) [character; 12,12,C] The state route number/s assigned to the road (if multiple numbers, delimited by a minus sign). Alpha characters in this field are to be in upper case.

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
21 (line)
0 (point / non printing line)

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology;
0
Attribute for point only.

ORIENTATION (orientation) [binary; 4,5,B] Currently not used for symbology;0
Attribute for point only.

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

All feature occurrences on the base material/digital data or the latest previous edition map will be shown unless there is clear evidence they no longer exist.

The NAME attribute will carry the name of the road the ford is on. Named fords may be shown as a locality coded place name.

GEODATA

Where a ford creates a gap in the road network it will be closed by a chain Ford.

Map

Fords shorter than 3 mm at map scale, including point features, will not be symbolised.

All fords, including those not symbolised, are to be labelled ‘ford’.

Data rules

Linear Fords can only appear over Watercourse areas or perennial Lakes, and must connect end to end with a road (ie. node to node) on either side of the watercourse.

Point Fords must be within a metre of the chord on a linear watercourse in both geographical and MGA94 coordinates, and be coincident with a node in the road network.

The Formation, National route number, State route number & Classification attributes will be shown on the Ford feature exactly as on the Road feature to which it is attached.

Related features

Road, Road bridge, Road causeway and Watercourse

Related chapters

Section 3 chapters 5.9 and 5.11.2

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

FORESHORE FLAT

That part of the seabed or estuarine areas, between mean high water and the line of lowest astronomical tide.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		62500	390625

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	forshor_flat	
Coverage (see Section 3 chapter 4)	o	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>5

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
22

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features (see Section 3 chapter 5.15).

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

Polygons that are smaller than the minimum size for inclusion and are in groups may be aggregated into one larger representative polygon where they are less than 0.5 mm apart at map scale.

GEODATA

Map

Data rules

Foreshore flats are bounded by the offshore line feature. Foreshore Flats must be over either Sea, Watercourse area or Lake, and cannot overlap other Offshore areas.

Related features

Mainland, Offshore line and Tile edge

Related chapters

Section3 chapter 6.9.3

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

GAS WELL

A pipe sunk in the ground for the purpose of obtaining subterranean oil or gas.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Point	
Planimetric Accuracy	100 / 40	
Feature code	gas_well	
Coverage (see Section 3 chapter 4)	u	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
103

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology;
0

ORIENTATION (orientation) [binary; 4,5,B] Currently not used by symbology; 0

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

All feature occurrences on the base material/digital data or the latest previous edition map will be captured/retained unless there is clear evidence they no longer exist.

Wells will not be shown within a built-up area.

These features may be located inland or offshore.

Abandoned wells will only be shown if of landmark significance.

GEODATA

Map

Gas wells are to have an accompanying descriptive note eg 'gas well', ‘oil well’ unless the words ‘gas well’, ‘oil well’ etc are included in the name. Abandoned wells will have ‘(abandoned)’ at the end of the descriptive note or name.

Data rules

Gas wells can not appear over Building area or Built-up areas.

Related features

Mine

Related chapters

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

GATE

An opening in a fence or wall for the passage of vehicles, people or animals and which may contain a device to limit passage.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Point	
Planimetric Accuracy	100 / 40	
Feature code	gate	
Coverage (see Section 3 chapter 4)	v	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
26

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology;
0

ORIENTATION (orientation) [binary; 4,5,B] Orientation in whole degrees from East going anti-clockwise; 0 - 360

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 this feature will only be shown in sparsely settled regions as defined by Appendix C 'Fence and Water Facilities Guide' except for gates on Vermin Proof fences which will be shown in all areas.

At 1:250 000 this feature will only be shown in sparsely settled regions as defined by Appendix C 'Fence and Water Facilities Guide', regardless of whether it previously existed in the base Series 2 data, except for gates on Vermin Proof fences which will be shown in all areas.

Gates will not be shown on vehicle tracks with the exception of gates in Vermin or Dog-proof fences which will be shown in all areas.

GEODATA

Map

The underlying fence symbol will be masked out for the gate symbol.

Data rules

Gates must fall exactly on the Fence and underlying road feature. They will be coincident with a node in the road. If necessary a vertice can be added to the fence to ensure the fence, road and gate are coincident with each other. Gates cannot appear in; Building Area, Sea, Lake, Canal area, Watercourse area or Reservoir features.

Related features

Fence, Road and Stock grid

Related chapters

Section 3 chapters 5.9 and 5.11.2 Appendix C

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

GRATICULE LINE

A line on a map or chart representing a parallel of latitude or a meridian of longitude including cross ticks.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100/40	
Feature code	graticule	
Coverage (see Section 3 chapter 4)	7	

Data Attributes

GEODATA and working database

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
575

General Notes

See appendix B for spacing of lines and ticks

GEODATA

Map

Type should be placed such that it does not overprint the graticule. If this is unavoidable then it is preferable that the graticule intersections are kept visible, as these are important reference points on the map.

The Graticule will be masked where black type unavoidably overprints the feature. The break measurement will be 0.2 mm on either side of the type where it crosses the feature. (Note: the feature will be masked only on the map and will be complete in the data.)

Data rules

Related features

Annotation and Grid line

Related chapters

Section 2 chapter 3.1.2, Section 3 chapter 5.10 Appendix B chapters 2, 3 and 9

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

GRID LINE

A line forming part of a rectangular Cartesian coordinate system that is superimposed on maps and charts to permit identification of ground locations with respect to other locations and the computation of direction and distance to other points.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100/40	
Feature code	grid_map	
Coverage (see Section 3 chapter 4)	6	

Data Attributes

GEODATA and working database

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
573 - Standard line
574 – 100 000 metre line at 1:250 000 & 10 000 metre line at 1:100 000
0 - Where the grid line follows the central meridian.

General Notes

The grid line will be broken for grid values. Breaks on northings will be 2 mm and breaks on eastings will be 3 mm.

GEODATA

Map

Black and red type should be placed such that it does not overprint the grid. If this is unavoidable then it is preferable that the grid intersections are kept visible, as these are an important mensuration points on the map.

The grid will not be broken where overprinted by black and red type.

The grid line will have a symbol 0, ie: will not print, where it follows the central meridian of the UTM zone.

Data rules

Related features

Annotation and Graticule line

Related chapters

Section 2 chapters 2.4 and 3.1.1 Appendix B chapters 2 and 3

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

HORIZONTAL CONTROL POINT

A point on the ground, the geographical position of which has been determined by geodetic survey.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Point	
Planimetric Accuracy	1 / 1	
Feature code	trig_station	
Coverage (see Section 3 chapter 4)	y	

Data Attributes

GEODATA and working database

ELEVATION (elevation) [number; 7,7,N,2] elevation in metres from the Australian Height Datum.

CODE (code) [character; 24,24,C] The code which identifies the Horizontal control point. Alpha characters in this field are to be in upper case.

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>6

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

NAME (name) [character; 50,50,C] The name of the feature the Horizontal control point is located on.

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
51
0 - see Section 3 chapter 6.6 - Locality mountain features, Spot elevations and Horizontal control points

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology;
0

ORIENTATION (orientation) [binary; 4,5,B] Currently not used by symbology; 0

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

ORDER (order) [character, 4,4,C] The horizontal control point's horizontal accuracy order

General Notes

Horizontal control points will be selected from the Horizontal control points data file. Only permanently marked and monumented horizontal control points (ie those with a beacon, cairn or pole) that have elevations will be shown. Only points with a horizontal accuracy of double zero, zero, first, second and third order will be shown.

No more than fifty points will be included on a standard map area. Where the land area of the map differs from the standard size, the maximum number will be in proportion.

If the number of monumented stations in the working database exceeds fifty all lowest order stations will be dropped. This process will be repeated until the number is less than the maximum. This process will take precedence over the overlap rules in Section3 chapter 5.3

The NAME field will be populated with the name of a prominent feature upon which the horizontal control point is situated. This feature must have a defined position within a localised area and should be represented elsewhere in the database under a different feature class, such as a locality mountain or a locality place name of clear locality (symbolised with symbol 52). Large area features such as ranges are not appropriate. The National Geodetic Database items name 1, name 2 and name 3 will not be used to populate the horizontal control point name field.

The CODE field will be populated with the alphanumeric designations from the National Geodetic Database. The alphanumeric designation will be found in the name 1, name 2 or name 3 field in the National Geodetic Database. Where there is no alphanumeric designation code this field will be left blank. Only alphanumeric designations containing letters and numerals will be included. Solely numeric designations will not be included nor will designations including words or place names such as 'Ravensthorpe 1' or 'log2'. Horizontal control point names from the name 1, name 2 or name 3 field will not be shown in the code field. Where more than one alphanumeric designation exists in the National Geodetic Database for a Horizontal control point an arbitrary choice will be made.

GEODATA

Map

Where a horizontal control point and another cultural feature such as a Landmark Point feature are adjacent or coincident, precedence will be given to the other cultural feature (see Section 3 chapter 6.6).

Alphanumeric designations will be shown when the horizontal control has no feature name. If a horizontal control point has a feature name, the alphanumeric designation will not be shown (See Section 2 chapter 5.13).

Data rules

Horizontal control points will not appear over;
Sea, Lakes, Reservoirs, Canal areas, Watercourse areas and Building Areas.

Auxiliary Contours, Contours and Horizontal Control Points or Spot elevations will not contradict each other.

Except for the application of the datum shift, Horizontal control points will not be moved from the coordinates supplied.

Related features

Auxiliary Contour, Benchmark, Contour, Landmark Point, Locality (mountain) and Spot elevation

Related chapters

Section 1 chapter 3.6.5 Section 2 chapter 5.13 Section 3 chapters 3.2.4 and 6.6

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

HYPSOMETRIC AREA

The area enclosed between adjacent contours.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	hypso_a	
Coverage (see Section 3 chapter 4)	c	

Data Attributes

GEODATA and working database

ELEVATION (elevation) [number; 7,7,N,2] Elevation in metres from the Australian Height Datum (see general notes)

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>5

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
0

General Notes

The elevation of the hypsometric areas is defined as the minimum elevation of all the bounding contours (excluding auxiliary contours).

Areas enclosed by one depression contour will carry for elevation the value of the depression contour minus the contour interval.

This feature will not be shown in sea areas.

Where hypsometric areas meet the edge of the working database the elevations must match those of any adjoining areas which have working data available.

GEODATA

Map

Data rules

Hypsometric areas are bounded by contour features. Waterbodies do not form voids in Hypsometric areas. All non-sea areas must be covered by Hypsometric areas Adjacent Hypsometric areas must have their elevations differing by only one contour interval.

Related features

Contour and Tile edge

Related chapters

Section 3 chapter 6.1

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

ISLAND

An area of land fully surrounded by the sea.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		625	3906

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	island	
Coverage (see Section 3 chapter 4)	f	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The name of the island

STATE/TERRITORY (state) [integer; 1,1,I] State identifier code;
0 - NOT APPLICABLE
1 - ACT: Australian Capital Territory
2 - JBT: Jervis Bay Territory
3 - NSW: New South Wales
4 - NT: Northern Territory
5 - QLD: Queensland
6 - SA: South Australia
7 - TAS: Tasmania
8 - VIC: Victoria
9 - WA: Western Australia

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>2

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
0

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features (see Section 3 chapter 5.15).

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

This feature refers to offshore islands only.

New features smaller than the minimum size will be shown as Offshore Rocks with a RELATIONSHIP of 4 – Bare.

See Section 1 chapter 3.8.5.

GEODATA

Map

The island name will appear on the map.

Data rules

Islands are bounded by Waterline Junction and/or Sea wall features.

Islands cannot overlap each other.

Related features

Junction, Sea Wall, Tile edge and Waterline

Related chapters

Section 1 chapter 3.8.5
Section 3 chapters 6.3 and 6.9.3

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

JETTY

A structure projecting into a body of water for use as a promenade or as a platform alongside which vessels may be secured for loading and unloading passengers and cargo.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
1 mm			

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	jetty	
Coverage (see Section 3 chapter 4)	h	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
70

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

See also Wharf.

GEODATA

Map

Jetties are to have an accompanying descriptive note eg 'jetty', ‘marina’, ‘pier’ unless the words ‘jetty’, ‘marina’ ‘pier’ etc are included in the name.

Data rules

Jetties can not overlap Building areas.

Related features

Breakwater, Sea wall and Wharf

Related chapters

Section 3 chapter 3.2.4

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

JUNCTION

An artificial line used to separate adjacent hydrographic areas which have differing attributes and across which flow can occur.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA

Spatial object

Representation	chain	
Planimetric Accuracy	9999 / 9999	
Feature code	junction	
Coverage (see Section 3 chapter 4)	f and w	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>2

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
0

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features (see Section 3 chapter 5.15).

General Notes

See Section 1 chapter 3.8.4

GEODATA

Map

Data rules

Junctions will be included in the Framework coverage where they form part of the coastline , and will replace the equivalent section of waterline. They will also appear in the framework cover where they separate two seas.

Junctions may also form a section of the boundary of lakes, Land subject to inundation, swamps, marine swamps, reservoirs, settling ponds, canal polygons and watercourse polygons.

Junctions are generally 2 point lines except where more vertices are needed to close the polygon and maintain the correct polygon closing line shape.

Junctions must be bordered by waterbodies in the Waterbodies coverage or by the sea on one side in the Framework coverage.

Junctions are only used to separate water polygons where there is no physical feature already doing so.
They are most commonly used to separate water polygon features with different names.

Related features

Canal, Connector, Contour, Island, Lake, Land subject to inundation, Mainland, Reservoir, Sea, Saline coastal flat, Swamp and Watercourse

Related chapters

Section 1 chapter 3.8.4
Section 3 chapters 5.11.1 and 5.11.3

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

KILOMETRIC DISTANCE INDICATOR

A symbol used to indicate points between which road distances are given.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

Map

Spatial object

Representation	Point	
Planimetric Accuracy	9999 / 9999	
Feature code	distance_ind	
Coverage (see Section 3 chapter 4)	5	

Data Attributes

GEODATA and working database

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
54

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology;
0

ORIENTATION (orientation) [binary; 4,5,B] Orientation in whole degrees from East going anti-clockwise; 0 - 360

General Notes

Pairs of Kilometric distance indicators must have a number showing distance between them.

Distances shall be measured to the nearest kilometre.

Use to show distances between two significant features eg between towns, major road intersections and road junctions or a combination of the above.

At 1:250 000
When a destination point falls on an adjoining sheet to the south or west, a kilometric distance marker will be placed at the intersection of the road and the neatline. When a destination point falls on an adjoining sheet to the north or east, a kilometric distance marker will be placed at the intersection of the road and the graticule line which forms the boundary of the adjoining map. When a destination falls within the bleed edge the Kilometric distance indicator will be placed on the destination. In these two cases no distance is required between the Kilometric distance indicator at the graticule and the trim line of the map. See Section 2 chapter 5.9

At 1:100 000
When a destination point falls on an adjoining sheet to the south or west, a kilometric distance marker will be placed at the intersection of the road and the neatline. When a destination point falls on an adjoining sheet to the north or east, a kilometric distance marker will be placed at the intersection of the road and the GDA94 graticule line which forms the boundary of the adjoining GDA94 map. No destination point will be indicated within the area between the GDA94 and AGD66 neatlines. No distance is required between the Kilometric distance indicator at the graticule and the trim line of the map. See Section 2 chapter 5.9

GEODATA

Map

The needle end of the symbol should point exactly at the town or road junction from which the distance is to be measured and will just touch the outside of the road or town symbol.

Kilometric distance indicators along the graticule lines that form the edge of the adjacent maps to the north and east will preferably be aligned so that the symbol falls in the bleed edge for 1:250 000 and inside the Geodata tile extents for 1:100 000 – see section 3 chapter 6.4.

Distances between Kilometric distance indicators will be shown as Annotation features.

Data rules

Related features

Annotation, Built-up area, Locality, Road, Road destination arrow and Tile edge

Related chapters

Section 2 chapter 5.9
Section 3 chapters 5.9 and 6.4

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

LAKE

A naturally occurring body of mainly static water surrounded by land.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		10000	62500

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	lake	
Coverage (see Section 3 chapter 4)	w	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The Lake's name

PERENNIALITY (perennial) [integer; 1,1,I] Code for perenniality;
1 - Perennial
2 - Non-perennial

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>2

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol numbers applicable:
10 - Perennial
11 - Non-perennial

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features (see Section 3 chapter 5.15).

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

New features smaller than the minimum area and on a watercourse will be shown by the feature 'waterhole'.

New features smaller than the minimum area and not on a watercourse will be shown by the feature 'Waterpoint'. This includes small lakes within the boundaries of a braided stream which are not on a watercourse.

Perenniality of lakes will be according to Appendix D - Inland water features guide where the lake is shown on the guide. Perenniality of Lakes not on the guide will be as shown on the base material/digital data. Where a lake was not previously shown, perenniality should be non-perennial unless there is strong evidence to the contrary.

Indigenous sacred sites will not be named as sacred sites on the map even if named on a previous edition map, but the feature may be a lake, pool or waterhole in which case the appropriate map symbol and hydrological name will be used.

GEODATA

Map

In areas containing numerous small lakes, sufficient will be shown to indicate the extent of the area and a suitable descriptive note added eg 'numerous small lakes'.

Claypans and saltpans will be labelled eg 'claypan'. Lakes will be labelled 'salt' where known to be saline.

Lakes will mask parks.

Data rules

Lakes will be bounded by Waterline and Junction features. (See Section 1, 3.8.4).

Lakes cannot overlap other waterbody cover polygons or Sea, Built-up area, Relief area cover features (except for Relief area voids) or Vegetation polygons (except voids and Woody vegetation).

Perennial Lakes cannot overlap Woody vegetation.

Related features

Connector, Junction, Reservoir, Tile edge, Watercourse, Waterhole, Waterline and Waterpoint

Related chapters

Section 1 chapters 3.8.3, 3.8.4, 3.8.9 and 3.9.1
Section 3 chapters 6.9.1 and 6.9.4

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

LAND SUBJECT TO INUNDATION

Low lying land usually adjacent to lakes or watercourses, which is regularly covered with flood water for short periods.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		62500	390625

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	sub_to_inund	
Coverage (see Section 3 chapter 4)	w	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The feature's name

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>5

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
14

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features (see Section 3 chapter 5.15).

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

Polygons that are smaller than the minimum size for inclusion and are in groups may be aggregated into one larger representative polygon where the small polygons are less than 0.5 mm apart at map scale.

GEODATA

Map

Data rules

Land subject to inundation will be bounded by waterline and junction features. (See Section 1, 3.8.4). Land subject to inundation cannot overlap other waterbody cover polygons or Sea or Built-up areas. Connectors may be shown through this feature.

Related features

Connector, Junction, Tile edge and Waterline

Related chapters

Section 1 chapters 3.8.3, 3.8.9 and 3.8.4 Section 3 chapter 6.9.2

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

LANDMARK AREA

Man-made or defined permanent features having landmark value or useful for navigation.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		40 000	

Scales

1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	- / 9999	
Feature code	landmark_a	
Coverage (see Section 3 chapter 4)	i	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The feature's name

DESCRIPTION (description) [character; 20,20,C] Description of the type of Landmark area feature, for example 'wind farm', 'oyster beds', 'solar farm'. The description field will be all lower case.

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>1

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
0

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

Landmark area features will only be used for man made entities or areas defined by man for a specific use which are clearly identifiable either through signage or infrastructure.

Landmark area features will not be used for entities covered by another feature class, for example buildings, park, prohibited areas.

Landmark area features include the following or any other feature specified by Geoscience Australia through a special instruction or action request:

Wind Farm	Solar Farm	Tracking Station
Tidal Power Farm	Cotton Gin (seasonal)	Rest Area

Geothermal Power Farm	Oyster Beds	Aquaculture Pens (non land based)
Research Station	Recycling Facilities	

When representing a Windfarm as a landmark area individual Wind generators should still be captured in landmark points but not symbolised. Similar situations where landmark points have a direct relationship with a landmark area may be treated in the same manner.

Indigenous sacred sites will not be named as sacred sites on the map even if named on a previous edition map, but the feature may be a lake, pool or waterhole in which case the appropriate map symbol and hydrological name will be used.

GEODATA

Map

Landmark area features are to have an accompanying descriptive note eg 'wind farm', ‘oyster bed’ unless the words 'wind farm', ‘oyster bed’ etc are included in the name.

Data rules

Landmark areas cannot overlap: Built-up Areas, Airport, Park, Cemetery, Rubbish Tip, Open Cut Mine

Landmark Area will be bounded by a Cultural Area Line feature.

Related features

Building, Settling Pond, Reserve Areas, Prohibited Areas, Park, Cemetery, Rubbish Tip, Airport, Landmark Point, Cultural Area Line

Related chapters

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

LANDMARK POINT

Man-made permanent features having landmark value or useful for navigation. Such features will have a height above the local terrain.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Point	
Planimetric Accuracy	100 / 40	
Feature code	landmark_p	
Coverage (see Section 3 chapter 4)	u	

Data Attributes

GEODATA and working database

DESCRIPTION (description) [character; 20] Description of the type of Landmark Point feature, for example 'mircowave tower', 'wind generator', 'chimney'. The description field will be all lower case.

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>1

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

HEIGHT (height) [number; 6,6,N,2] Height of feature above ground level

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
501
0 – At 1:100 000 where landmark points have a direct relationship with landmark area (see general notes)

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology;
0

ORIENTATION (orientation) [binary; 4,5,B] Currently not used by symbology; 0

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map, may include a name

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

New towers and other obstructions will be added from the towers revision source material. Where the position of new towers can not be verified on the imagery or other revision source material they be labelled '(position approximate)'. If the feature is in a closely settled area, the exact location should be sought via an Action Request.

Landmark point features will only be used for man made entities. See the included terms cross reference.

Landmark point features are not shown in or in close proximity to Built-up areas, unless the feature is of significant landmark value.

Landmark point features will only be used for entities which cover a small area on the ground and which are usually prominent from a distance.

See the included terms cross reference. Landmark point features will not be used for entities covered by another feature class, for example buildings.

Indigenous sacred sites will not be named as sacred sites on the map even if named on a previous edition map, but the feature may be a lake, pool or waterhole in which case the appropriate map symbol and hydrological name will be used.

Offshore marine lights and beacons will not be included as landmark point features at 1:250 000. All features meeting selection criteria will be shown at 1:100 000.

At 1:250 000 the height attribute will only be populated where it is greater than or equal to **44.5** metres and a figure is provided in the base material/digital data or revision source material. At 1:100 000 the height attribute will be populated where a figure is provided in the base material/digital data or revision source material.

At 1:100 000 landmark point features whose area is larger than 40 000 sq. m will be shown as a landmark area feature.

At 1:100 000 when representing a Windfarm as a landmark area individual Wind generators should still be captured in landmark points but not symbolised. Similar situations where landmark points have a direct relationship with a landmark area may be treated in the same manner.

GEODATA

Map

Landmark point features are to have an accompanying descriptive note eg 'tower', 'lookout' unless the words 'tower', 'lookout' etc are included in the name.

Height above ground level of features will be shown as part of the descriptive note where it equals or exceeds **44.50** metres rounded to the nearest metre and when that information is available.

The height shown on the map will be rounded to the nearest metre.

Data rules

Related features

Building, Horizontal control point, Landmark Area, Lighthouse, Spot elevation, Storage tank and Water tank

Related chapters

Section 3 chapters 3.2.4 and 6.6

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

LEVEE

A low earth wall erected to restrain flood waters or to contain irrigation water.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
2 mm	2 m		

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	levee	
Coverage (see Section 3 chapter 4)	m	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
921

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

Height criteria will not apply to levees within Salt evaporators. (see Salt evaporator)

Where a levee and a road co-exist and the road travels the whole length of the levee then an embankment feature should be used instead of a levee.

GEODATA

Map

Data rules

Levees cannot overlap Sea, or Building area features. Levees cannot cross other morphology coverage lines.

Related features

Embankment, Salt evaporator and Salt evaporator internal line

Related chapters

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

LIGHTHOUSE

A building or structure housing a light used as a navigation aid to shipping.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Point	
Planimetric Accuracy	100 / 40	
Feature code	lighthouse	
Coverage (see Section 3 chapter 4)	n	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The Lighthouse's name

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>1

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
72

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology;
0

ORIENTATION (orientation) [binary; 4,5,B] Currently not used by symbology; 0

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

Lighthouse will be named in the data, but will only be named on the map (in accordance with approved reference sources) where the lighthouse does not have the same root name as the Island or Cape feature. For example, the name Bedout Lighthouse would not be shown when it is situated on Bedout Island.

The lighthouse need not be operational to be included.

Navigation beacons will not be classified as lighthouses.

Reference should be made to Supplementary Guideline No 6 (Lighthouses vs Marine Lights) when making decisions on whether a feature should be included in the new product.

Revision source material for Lighthouses will be supplied.

GEODATA

Where a Lighthouse and an Offshore rock are shown on the base material/digital data or revision source material to be coincident, one of the two features will be displaced by a maximum of 10 metres in any direction so both can be included in the data.

Map

Where a lighthouse and an offshore rock are in close proximity the lighthouse symbol will be given precedence but the name of the offshore rock will take precedence over the lighthouse name.

Data rules

Lighthouses cannot overlap the sea except when within 10m of an offshore rock.

Related features

Cliff, Landmark point and Offshore rock

Related chapters

Section 3 chapter 3.2.4

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

LOCALITY

A named place or area.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Point	
Planimetric Accuracy	Codes 4, 5 & 12: 100 / 40	Other codes: 9999 / 9999
Feature code	locality	
Coverage (see Section 3 chapter 4)	l	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The locality's name.

LOCALITY CODE (locality) [integer; 2,2,I] Code identifying the type of locality;
1 - Bay-inlet-cove
2 - Beach
3 - Cape-headland-point
4 - Homestead
5 - Road junction
6 - Mountain-peak-hill
7 - Pass
8 - Populated place
9 - Waterbody island
10 - Place name
11 - Gorge
12 - Cemetery

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>1 - locality code 5
<tile-id>2 - locality code < 12 and not 4 or 5
<tile-id>4 - locality code 4 or 12

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol numbers applicable:
0 - Bay-inlet-cove
(non printing)
0 - Beach

(non printing)
0 - Cape-headland-point
(non printing)
40 - Homestead
0 - Road junction
(non printing)
0 - Mountain-peak-hill (non-printing - see data rules for exceptions where symbol to be 52)
0 - Pass
(non printing)
0 - Populated place (non-printing - see data rules for exceptions where symbol to be 420)
0 - Waterbody island
(non printing)
0 - Place name
(non-printing - see data rules for exceptions where symbol to be 420 or 52)
0 - Gorge
(non printing)
451 – Cemetery (see map rules for exceptions where symbol is to be 0 non-printing)

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology; 0

ORIENTATION (orientation) [binary; 4,5,B] Currently not used by symbology; 0

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features (see Section 3 chapter 5.15).

General Notes

See also Section 3 chapter 6.5.

The homestead feature (Code 4) will only be shown in densely settled regions as defined by Appendix C 'Fence and Water Facilities Guide' when considered significant. This will be regardless of whether it was shown on the base material/digital data (at 1:100 000) or base Series 2 data (at 1:250 000). For information on capture and display of the homesteads feature (Code 4) in moderately and sparsely settled areas refer to Appendix C.

Code 1, Bay, inlet, and cove: This code will be used for an indentation of the sea into the land and for the equivalent features in inland waterbodies. The Locality point will be positioned at a point in the sea or waterbody in the middle of the indentation.

Code 2, Beach: The names of all beaches on the base material/digital data and revision source material are to be included except where an adjacent populated place has the same root-name. ie. 'Bondi Beach' would not appear if there is an adjacent populated place on the map named 'Bondi'. The position of the Locality point will be coincident with the Waterline at the approximate centre of the beach.

Code 3, Cape, headland, head, point: This code will be used for a section of land protruding into the sea and for the equivalent features in inland waterbodies. The Locality point will be positioned at a point on the land representative of the location of the entity.

Code 4, Homesteads: Only operational homesteads will have this code. Outstations are to be considered as homesteads. The locality point for a homestead must be cloned with a building (see Building). Outcamps will be shown as a locality place name not as a homestead.

Code 5, Road Junction: Named road junctions are included. The position of the Locality point will be coincident with the node of the road intersection.

Code 6, Mountain-peak-hill: The locality point will be positioned exactly as shown on the latest previous edition map or base material/digital data. If a positioning point is not shown on the map

then other compilations or large scale maps may be used to position the locality feature.

Code 7, Pass: Named passes on the road network will be included. Any other passes included on the latest previous edition map or base material/digital data will be included. The locality point will be at the highest point on the pass. Where a pass is traversed by a road feature, the point will be coincident with a vertice on the road. If necessary, a vertice will be created on the road coincident with the highest point on the road.

Code 8, Populated Places: Populated places have a population of 200 or more. All populated places in the supplied Census database clip will be included as populated place localities. The names of populated places will be as named for the census. Where names have been combined for the census (eg hyphenated) they will be combined unless separate populations are given for the components in which case the components will be named separately.

The feature point for a populated place will be positioned coincident with a node or vertice on the road network unless there is no road within 1 mm at map scale of the built-up area associated with the populated place. If necessary, a vertice will be created on the road coincident with the locality populated place feature. For populated places with a population over 20 000 the point should be placed as near as possible on the road network to the location of the central post office.

The name of some populated places may appear two or three times in the Infrastructure layer eg. if there is also a Railway Station or a Built-up area polygon of the same name.

Code 9, Waterbody island: Only named inland islands and those which form part of the coastline will be depicted. (See Section 1 3.8.5). The locality point will be placed on land at the approximate centre of the island. Offshore islands will be named as an attribute of the polygon, see Island.

Code 10, Place Name: This category will be used to show localities that do not fall in any other category. Text & the locality point for large area features shown on Appendix F will be placed within the limits of the area. If the area on Appendix F occupies less than 5% of the area of the map (including the bleed edges) it will not be shown. The Locality point for other area features will be located where the name was located in the base material/digital data or where text was placed on the latest previous edition map.

'Other Waters' indicated on Appendix E will be shown as Locality Place Names. Oceans that overlay Seas will only be shown as annotation features in the Working Database.

Text & the locality point for Indigenous Lands shown on Appendix O will be placed within the limits of the area. If the area on Appendix O occupies less than 20% of the area of the map (including the bleed edges) it will not be shown.

Suburb names included on the latest previous edition map and confirmed on the authorised revision source material for suburb names will be included as place names.

Code 11, Gorge: The locality point will be placed approximately half way along the length of the gorge. The locality point will be coincident with a vertice on the main watercourse in the gorge, where there is a watercourse. Where there is no water course the locality point will be placed central to the gorge.

Code 12, Cemeteries: Used for cemeteries smaller than the size criteria for the Cemetery feature. Cemeteries which exceed the size criteria will be shown using the feature 'cemetery'. The locality point is to be placed within the cemetery.

Indigenous sacred sites will not be named as sacred sites on the map even if named on a previous edition map, but the feature may be a lake, pool or waterhole in which case the appropriate map symbol and hydrological name will be used.

GEODATA

Code 4, Homestead; Homestead localities will be cloned as buildings.

Map

Code 4,
Homestead names will be shown as on the reference material supplied.

1:100 000
Individual buildings around the main homestead will be shown, if scale permits, by Building features.

Where a number of buildings in a homestead complex are grouped together and cannot be shown individually, they will be shown using one Homestead.

1:250 000
A homestead may be shown by a single feature representing a group of buildings.

Code 6, Mountain-peak-hill:
Locality Mountain-peak-hills will be named. See Section 2 chapter 5.10 for naming conventions.

Code 8, Populated place: Populated places will be named.

Code 10, Where symbol 420 is used, the symbol will mask all other detail.

Code 12, Where inclusion of a locality Cemetery would result in clutter they are to be symbolised to 0 non-printing.

Data rules

Where a locality name refers to a wide area the name may appear on a number of adjacent tiles eg 'Nullarbor Plain'. A locality of the same code and name should not be repeated on the same tile unless it relates to a number of entities sharing the same name.

Code 6 Mountain-peak-hill: If a Mountain-peak-hill feature appears on the latest previous edition map with a name and spot identifier only and a matching spot elevation does not exist then the Locality will have a symbol code of 52, otherwise a symbol code of 0.

Where there is a known elevation for the Mountain-peak-hill feature it will be cloned as a Spot elevation (see Spot elevation). Should the spot elevation need to be moved (see Section 3 chapter 6.6) the Locality Mountain-peak-hill will be moved with it.

Code 8 Populated places: Populated places will not be symbolised on the map if they fall within a Built-up area polygon but will have symbol 420 when no Built-up area polygon exists.

Code 10 Place name: Places with a population of less than 200 and a Built-up area not large enough to be shown as a polygon will be positioned coincident with a vertice or node on the road network. These places will have a symbol code 420. Note: symbol 420 will only be used where the place name is associated with a small built-up area. Small features with an indentifable location that are not represented by another feature class will be represented using symbol 52 (e.g. historical markers, rocks, etc).

Related features

Building, Built-up area, Cemetery, Horizontal control point, Kilometric distance marker, Railway station, Road, Spot elevation, Watercourse and Waterbody void

Related chapters

Section 1 chapters 3.8.5 and 3.8.7
Section 3 chapters 3.2.4, 5.11.1, 5.11.2, 6.3, 6.5 and 6.6
Appendix E
Appendix F

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

LOCK

An enclosure in a water body with gates at both ends to raise or lower the water level to enable vessels to pass from one level to another.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Point	
Planimetric Accuracy	100 / 40	
Feature code	lock	
Coverage (see Section 3 chapter 4)	d	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The Lock's name.

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
754

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology;
0

ORIENTATION (orientation) [binary; 4,5,B] Orientation in whole degrees from East going anti-clockwise; 0 - 360

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

The lock should appear central to the watercourse area passage width.

GEODATA

Map

The symbol will be oriented so the point faces upstream.

Locks are to have an accompanying descriptive note ‘lock’ unless the word ‘lock’ is included in the name.

Features should be labelled or named appropriately.

Locks will mask Lock Lines.

Data rules

Locks must appear in a watercourse area.

Locks must be coincident with a node on the connector feature.

At 1:100 000 Locks must be coincident with the middle vertex on a Lock Line.

Related features

Connector, Watercourse and Lock Line

Related chapters

Section 3 chapters 5.9 and 5.11.2

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

LOCK LINE

A line used to complete the representation of a lock and ensure the impression of an obstruction across the full width of the water passage (i.e a watercourse area).

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:100 000

Feature Usage

Map

Spatial object

Representation	Chain	
Planimetric Accuracy	- / 40	
Feature code	Lock_l	
Coverage (see Section 3 chapter 4)	5	

Data Attributes

GEODATA and working database

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
42

General Notes

Lock Lines should be a 3 vertex straight line feature extending the full width of a watercourse area at right angles to the orientation of the lock feature under which it is situated.

GEODATA

Map

Data rules

Lock Lines must appear in a watercourse area.

Each end of the Lock Line must be coincident with a vertex in the underlying waterline surrounding the watercourse area.

At 1:100 000 Locks must be coincident with the middle vertex on a Lock Line.

Related features

Connector, Watercourse and Lock

Related chapters

Section 3 chapters 5.9 and 5.11.2

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

MAINLAND

The area of continental Australia including Tasmania.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	mainland	
Coverage (see Section 3 chapter 4)	f	

Data Attributes

GEODATA and working database

STATE/TERRITORY (state) [integer; 1,1,I] State identifier code;
1 - ACT: Australian Capital Territory
2 - JBT: Jervis Bay Territory
3 - NSW: New South Wales
4 - NT: Northern Territory
5 - QLD: Queensland
6 - SA: South Australia
7 - TAS: Tasmania
8 - VIC: Victoria
9 - WA: Western Australia

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>2

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
0

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features (see Section 3 chapter 5.15).

General Notes

GEODATA

Map

Data rules

The mainland feature will be bounded by a combination of Waterline, State border, Sea wall and Junction features. Mainland excludes Sea areas, and Islands surrounded by the Sea. Mainland cannot overlap Offshore areas except Foreshore flats and associated Offshore voids in estuarine areas (see Foreshore flat).

Related features

Foreshore flat, Junction, Offshore void, Sea wall, State border, Waterline and Tile edge

Related chapters

Section 3 chapter 6.9.3

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

MANGROVE

A dense growth of mangrove trees, which grow to a uniform height on mud flats in estuarine or salt waters.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		62500	390625

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	mangrove	
Coverage (see Section 3 chapter 4)	t	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>2

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
7

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

Mangroves will be revised from the thematic mapper imagery to be supplied.

Size criteria will not apply where mangrove completely covers small islands i.e boundary of island is completely coincident with boundary of mangrove.

Polygons that are smaller than the minimum size for inclusion and are in groups may be aggregated into one larger representative polygon where the small areas of mangrove are less than 0.5 mm apart at map scale.

GEODATA

Map

Data rules

Mangrove will be bounded by a vegetation line feature. Mangrove cannot overlap; Aircraft facility polygon, Airport Area, Sand, Open cut/Mining area, Sand dunes, Windbreaks, other vegetation polygons, Sea, Building area and waterbody coverage features except Mangrove Flat. At 1:250 000 Mangrove and Mangrove Flat must be a perfect clone of each other. ie each arc must be replicated in the other feature.

Related features

Connector,Woody vegetation, Mangrove flat, Tile edge, Vegetation line and Watercourse

Related chapters

Section 3 chapter 5.11.1

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

MANGROVE FLAT

A nearly level tract of land between the low and high water lines vegetated with mangroves

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		62500	390625

Scales

1:250 000

Feature Usage

GEODATA

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / -	
Feature code	mangrove_flt	
Coverage (see Section 3 chapter 4)	w	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>2

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
0

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features (see Section 3 chapter 5.15).

General Notes

See Mangrove.

At 1:250 000 Mangrove flats will be cloned from the revised Mangrove features.

GEODATA

Map

Data rules

Mangrove flats will be bounded by a waterline feature. They will not be bounded by a junction feature. At 1:250 000 mangrove flats will be cloned from the revised Mangroves, and must perfectly match the mangrove, ie: each arc must be replicated in the other feature.

Related features

Mangrove, Tile edge and Waterline

Related chapters

Section 1 chapters 3.8.3, 3.8.4 and 3.8.9 Section 3 chapter 5.11.1

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

MAP AREA

The area covered by the working database.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

Working database only

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	map_area	
Coverage (see Section 3 chapter 4)	8	

Data Attributes

GEODATA and working database

Working database only

General Notes

GEODATA

Map

Data rules

Related features

Map mask

Related chapters

Appendix H

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

MAP MASK

The bounding line for Map area.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

Working database only

Spatial object

Representation	Chain	
Planimetric Accuracy	1/1	
Feature code	map_mask	
Coverage (see Section 3 chapter 4)	8	

Data Attributes

GEODATA and working database

Working database only

General Notes

GEODATA

Map

Data rules

The distance between vertices will be 0.002 degrees (approximately 200 metres on the ground).

Related features

Map area and Tile edge

Related chapters

Appendix H

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

MARINE SWAMP

That low lying part of the backshore area of tidal waters, usually immediately behind saline coastal flat, which maintains a high salt water content, and is covered with characteristic thick grasses and reed growths.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		40000	250000

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	swamp_marine	
Coverage (see Section 3 chapter 4)	w	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>5

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
908

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

Polygons that are smaller than the minimum size for inclusion and are in groups may be aggregated into one larger representative polygon where the small areas of marine swamp are less than 0.5 mm apart at map scale.

GEODATA

Map

Watercourses entering swampy areas will be shown only to the limits of eroded channels.

Marine Swamps having distinctive vegetation will be labelled appropriately e.g. lignum, marsh, wetlands, cane grass unless a description is included in the name.

Marine Swamps will have a descriptive note “marine swamp”. Where clutter occurs this note will take precedence to the distinctive vegetation label, otherwise where applicable both shall be shown.

Data rules

Marine Swamps cannot overlap;
Other waterbody coverage polygons, Sea or Open cut polygon areas.

Marine swamps will be bounded by Waterlines and may be bounded by Junction features (see Section 1 chapter 3.8.4)

Related features

Connector, Swamp, Tile edge and Waterline

Related chapters

Section 1 chapters 3.8.3, 3.8.4 and 3.8.9
Section 3 chapters 6.9.2 and 6.9.3

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

MINE

An excavation for the extraction of minerals.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Point	
Planimetric Accuracy	100 / 40	
Feature code	mine	
Coverage (see Section 3 chapter 4)	u	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The Mine's name

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
106 - symbolised mine
0 - Cloned Open cut/mining area

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology; 0

ORIENTATION (orientation) [binary; 4,5,B] Currently not used by symbology; 0

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

Indicative revision source material for mines will be supplied. However, mines will be retained from the existing base material/digital data unless there is clear evidence they no longer exist and new mines will only be added when their position can be verified on the imagery or other reliable revision source material.

This feature may be used to indicate a small group of mines.

Open cut/mining area paracentroids will be cloned as mines.

GEODATA

Map

Mines larger than 140 625 square metres at 1:250 000 and 22 500 at 1:100 000 scale will be shown as Open Cut/Mining area features on the map.

Abandoned mines will be labelled ‘abandoned’

Mines may have a descriptive note where its known function is expanded beyond that of the strict definition of a mine and where it provides additional meaningful detail to the map e.g. clay pit, gravel pit, mining area unless the words clay pit, gravel pit, mining area, etc are included in the name.

Where a mine is a clone of an open cut paracentroid a descriptive note may only be included where its known function is expanded beyond that of the strict definition of a mine and an open cut mine and where it would provide additional meaningful detail to the map. Descriptive notes meeting this criterion should be duplicated in the open cut mine feature but not on the map face. A descriptive note of "mine" is not to be used.

Data rules

Mines can appear in Built-up area. They will not overlap Building area features.

Related features

Gas well, Open Cut/mining area and Settling ponds

Related chapters

Section 3 chapters 3.2.4 and 5.11.1

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

OFFSHORE LINE

The line bounding polygons in the Offshore layer.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	offshor_l	
Coverage (see Section 3 chapter 4)	o	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
95 - where forming a boundary between Reef of code 2 (shoal) and Offshore void, and between Reef of code 2 (shoal) and the open sea.
0 - all other cases.

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features (see Section 3 chapter 5.15).

General Notes

GEODATA

Map

Data rules

Offshore lines will bound Foreshore flat, Offshore void and Reef features.

Offshore lines will be coincident with waterlines bounding the sea, estuarine lakes or estuarine

watercourse areas where the area enclosed by the Offshore line abuts the features and falls within 50 metres at 1:250 000 and 20 metres at 1:100 000 of that Waterline feature.

Related features

Built-up area line, Foreshore flat, Offshore void, Reef and Waterline

Related chapters

Section 3 chapter 5.11.2

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

OFFSHORE ROCK

A rock located offshore that represents a hazard to shipping.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Point	
Planimetric Accuracy	100 / 40	
Feature code	rock_offshor	
Coverage (see Section 3 chapter 4)	n	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The Offshore rock's name.

RELATIONSHIP (relationship) [Integer; 1,1,I] Code for relationship to sea level;
4 - Bare
5 - Tidal
6 - Submerged

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
980 - Submerged
98 – Bare or Tidal
0 - when in close proximity to a lighthouse or unavoidably clashes with text.

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology; 0

ORIENTATION (orientation) [binary; 4,5,B] Currently not used by symbology; 0

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

When larger than 390625 sq. m at 1:250 000 or 62 500 sq. m at 1:100 000 and has a RELATIONSHIP Code of 5, the Reef feature will be used.

GEODATA

Where a Lighthouse and an Offshore rock are shown on the base material/digital data or revision source material to be coincident, one of the two features will be displaced by a maximum of 10 metres in any direction so both can be included in the data.

Map

Offshore rocks may be symbolised as non printing (Symbol Number 0) where they unavoidably clash with text.

Where a lighthouse and an offshore rock are in close proximity, the lighthouse symbol will be given precedence (the offshore rock will have a symbol number of 0) but the name of the offshore rock will take precedence over the lighthouse name.

Data rules

Offshore rocks must appear in the Sea, Reefs, Foreshore flats or Offshore voids.

Related features

Lighthouse and Reef

Related chapters

Section 3 chapter 3.2.4

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

OFFSHORE VOID

A void in an offshore polygon

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	offshor_void	
Coverage (see Section 3 chapter 4)	o	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>5

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
0

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features (see Section 3 chapter 5.15).

General Notes

GEODATA

Map

Data rules

Offshore voids will be bounded by an offshore line.

Related features

Mainland, Offshore line and Tile edge

Related chapters

Section 1 chapter 3.8.2

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

OPEN CUT/MINING AREA

An excavation made by the removal of stone, gravel, clay or mineral from the ground for commercial or industrial purposes and tailings dumps from mining operations.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		22500	140625

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	open_cut	
Coverage (see Section 3 chapter 4)	q	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>2

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

NAME (name) [character; 50,50,C] The Mine's name

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
102

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

New features smaller than the minimum size for inclusion will be represented as Mines. (see Mines).

GEODATA

Open cut/mining area paracentroids will be cloned as mines except where they relate to tailings dumps not adjacent to a mine or where a mine feature already exists.

Map

Open cut/mining areas are NOT to be labelled with descriptive text indicating the mineral which is extracted.

Tailings dumps not adjacent to a mine will be labelled ‘tailings’.

Abandoned mines will be labelled 'abandoned'.

A descriptive note may be included where its known function is expanded beyond that of the strict definition an open cut mine, and where it would provide additional meaningful detail to the map. A descriptive note of "mine" is not to be used.

Data rules

Open cut/Mining areas will be bounded by a Relief area line symbol.

The following cannot overlap or appear inside Open Cut/Mining areas;
Aeronautical points, Aeronautical area, Built-up areas, Contours other than of type connector standard, Watercourses, Spot elevations, Sea, any waterbody coverage feature, any vegetation coverage feature or any other relief area polygon.

Related features

Mine, Relief area line, Settling ponds and Tile edge

Related chapters

Section 3 chapters 3.2.4 and 5.11.1

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

ORCHARD OR VINEYARD

An area covered by an orderly planting of trees, vines or bushes which yield fruits, nuts or other edible products.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		62500	390625

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	orchard	
Coverage (see Section 3 chapter 4)	t	

Data Attributes

GEODATA and working database

PLANTING TYPE (type) [integer;1,1,I] Type for horticultural planting and/or product.
3 – Vineyard
4 – Coffee
5 – Bananas
6 – Tree Nuts
7 – Other Orchard type (unspecified).

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>5

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
5

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

Polygons that are smaller than the minimum size for inclusion and are in groups may be aggregated into one larger representative polygon where they are less than 0.5 mm apart at map scale.

GEODATA

Map

At 1:100 000 orchards are to have an accompanying descriptive note e.g. ‘bananas’,’ tree nuts’,’ vineyard’, etc if the horticultural type/product is known.

Data rules

Orchard or vineyards will be bounded by a Vegetation line feature.

The following cannot overlap Orchard or vineyard areas;
Aircraft facility polygons, Airport area, Built-up areas, Building areas, Sea, Offshore coverage features (except Offshore void), Reservoirs, Lakes, Canal areas, Watercourse areas, Mangrove Flats, Salt evaporators, Settling ponds, Open cut, Sand, Sand dunes or other vegetation coverage polygons.

Related features

Woody vegetation, Plantation, Tile edge and Vegetation line

Related chapters

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

PARK

An area of land developed for recreational purposes.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		22500	140625

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	park	
Coverage (see Section 3 chapter 4)	b	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The park's name

PARK CODE (park) [integer; 2,2,I] Code for type of park;
1 - Gardens
2 - Recreation area
3 - Golf course
4 - Racecourse
5 - Oval
6 - Multiple use
7 - Civic square
8 - Showground
9 - Rifle range
10 - Other

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>2

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
24

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

Parks such as ovals shown on the latest previous edition map as a Landmark point symbol will not be shown unless they meet the size criteria for Parks.

Parks will usually occur surrounded by built-up areas. They may also be isolated polygons outside the built up area.

Parks should not be confused with the Reserve - Nature Conservation feature.

Parks may overlap waterbody polygons. Waterbodies fully included in parks will be considered part of the park. These waterbodies will also be shown in the waterbodies layer.

Where different types of park adjoin one another, each area which meets or exceeds the minimum size for inclusion will be shown as a separate polygon and attributed accordingly. Adjoining areas too small to show separately but which together create an area at or above the minimum size will be shown as a single polygon.

GEODATA

Map

Parks will be named where they are considered to be nationally cultural or historically significant. E.g. Melbourne Botanical Gardens, Taronga Zoo.

Parks are to have an accompanying descriptive note eg ‘golf course’, ‘showgrounds’ unless the words ‘golf course’, ’showgrounds’ etc are included in the name. ‘Multiple use’ and ‘other’ will not be used as descriptive labels.

In areas where there are a number of parks and other detail the labels may be dropped to avoid clutter. In such cases preference will be given to showing labels on the following types of park in descending order.

rifle range
showground
racecourse
golf course
oval
All other categories

Data rules

Parks will be bounded by a Built-up area line feature.

Parks cannot overlap;
Sea, Aeronautical areas and other built-up area coverage polygons.

Related features

Built-up area line, Reserve - Nature Conservation and Tile edge

Related chapters

Section 1 chapter 3.8.9

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

PINNACLE

A tall, slender spire shaped rock; projecting from a level or gently sloping surface, or the top of a mountain.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Point	
Planimetric Accuracy	100 / 40	
Feature code	pinnacle	
Coverage (see Section 3 chapter 4)	m	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

NAME (name) [character; 50,50,C] The pinnacle's name

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
84

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology;
0

ORIENTATION (orientation) [binary; 4,5,B] Currently not used by symbology; 0

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

All feature occurrences on in the base material/digital data will be retained unless there is clear evidence they no longer exist.

If the elevation of the top of the Pinnacle is known it will be cloned as a Spot elevation..

GEODATA

Map

Pinnacles will be named where known.

Where a pinnacle is coincident with a spot elevation feature the elevation of the spot elevation will be shown on the map.

Data rules

Pinnacles cannot appear in the following;
Sea, Lakes, Reservoirs, Canal areas, Watercourse areas, Building areas and Aircraft facilities.

Related features

Spot elevation

Related chapters

Section 3 chapter 5.11.1

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

PIPELINE

A pipe used for carrying gases and/or liquids.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
5 mm			

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	pipeline	
Coverage (see Section 3 chapter 4)	p	

Data Attributes

GEODATA and working database

PRODUCT CODE (product) [integer; 1.1,I] Code for the liquid or gas transported by the pipe;
1 - Water
2 - Gas
3 - Oil
4 - Gas and Oil
5 - Other
6 - Unknown

RELATIONSHIP (relationship) [integer; 1,1,I] code for the relationship of the feature to ground level
1 - Elevated
2 - Above ground
3 - Underground

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

NAME (name) [character; 50,50,C] The pipeline's name

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
281 - Above ground/Elevated Pipelines whose product is not water
282 – Underground Pipelines whose product is not water
947 – Water Pipelines
0 - Pipeline running too close to another pipeline to be shown or pipeline within or bounding a Built-up Area or areas nested within Built-up area

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences. Submerged pipelines will not be shown.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist. However, submerged pipelines will not be shown.

When a new undersized length of water pipeline exists between two canals which meet their selection criterion, then the section of water pipeline should be represented as a canal feature, accepting the attributes of its adjoining canals.

Only Pipelines included in the revision source material for pipelines will be added. Two or more pipelines running closer that 1mm to scale, parallel to each other and carrying the same substance will be shown as a single feature.

Small pipelines serving individual homesteads or farmhouses will not be shown.

If base material/digital data and revision source material does not provide information on oil or gas pipeline relationships to ground level, then they should be attributed as Underground. However, if base material/digital data and revision source material does not provide information on water pipeline relationships to ground level, then this information be sought via an Action Request to Geoscience Australia.

GEODATA

Map

Pipelines are to have an accompanying descriptive note eg ‘pipeline’, ‘gas pipeline’, unless the word ‘pipeline’ is included in the name. Underground pipelines will be labelled with a descriptive note, ‘underground’.

Two or more pipelines running closer that 1mm to scale, parallel to each other and carrying the different substances will be symbolised as a single line. In this case one or more of the pipelines will have a symbol number 0 and the descriptive note will describe both substances, for example ‘gas and oil pipelines’.

Pipelines in or bounding a Built-up Area and areas nested in Built-up areas will not be symbolised , they will be allocated symbol '0' (non-printing).

Pipelines will be masked where black type unavoidably overprints the feature. The break measurement will be 0.2 mm on either side of the type where it crosses the feature. (Note: the feature will be masked only on the map and will be complete in the data.)

Data rules

Where the pipeline meets the edge of a Built-up area polygon boundary it will be snapped to either a node or vertice on that boundary.

Where one pipeline crosses another a node will be shown at the intersection point. ie. the arcs will be split.

Related features

Related chapters

Section 3 chapter 5.11.3

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

PLANTATION

Intensively managed stands of trees of either native or exotic species, created by the regular placement of seedlings or seeds.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		62500	390625

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	plantation	
Coverage (see Section 3 chapter 4)	t	

Data Attributes

GEODATA and working database

PLANTING TYPE (type) [integer;1,1,I] Code for the type of plantation wood product planted and/or produced.
1 – Softwood (e.g. pine plantation)
2 – Hardwood (e.g. eucalyptus)

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>2

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:

Polygons (250K only)
6

Polygons (100K only)
6 - Softwood
600 - Hardwood

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

Polygons that are smaller than the minimum size for inclusion and are in groups may be aggregated into one larger representative polygon where they are less than 0.5 mm apart at map scale.

GEODATA

Map

Data rules

Plantations will be bounded by a Vegetation line feature.

Plantations cannot overlap;
Open cut, Sand, Sand dunes, other Vegetation types, Lakes, Reservoirs, Canal areas, Watercourse areas, Building areas, Built-up areas, Aircraft facility polygons, Airport areas, Sea, Mangrove Flats, Salt evaporators and Settling ponds.

Related features

Woody vegetation, Orchard or vineyard, Tile edge and Vegetation line

Related chapters

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

POWERLINE

Wire or wires supported on poles, towers or pylons, used for the transmission of high voltage electricity.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
10 mm			

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	powerline	
Coverage (see Section 3 chapter 4)	k	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>1

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
541 (250K only)
542 (100K only)
0 non printing line

General Notes

At 1:100 000 only powerlines included in the supplied revision source materials for powerlines will be shown.

At 1:250 000 only powerlines included in the supplied revision source materials for powerlines with a rated capacity of 110kv or greater will be shown.

Several powerlines running closer than 1 mm to scale and parallel to each other will be shown as one line.

Cartographic generalisation should take into account the width of the powerline symbol. It is acceptable for Powerline pylon symbols to overprint linear features such as roads.

GEODATA

Map

Powerlines in or bounding Built-up Area and areas nested in Built-up areas will not be symbolised , they will be allocated symbol '0' (non-printing).

Powerlines will be masked where black type unavoidably overprints the feature. The break measurement will be 0.2 mm on either side of the type where it crosses the feature. (Note: the feature will be masked only on the map and will be complete in the data.)

Powerlines sourced from the electricity (ele) database with the words 'position approximate' indicated in the 'data supplier assessment column' will be labelled with a descriptive note *position approximate* where practical.

Data rules

Where the powerline meets the Built-up Area it will be snapped to either a node or vertice on that feature.

Where one powerline crosses another a node will be shown at their intersection point. ie. the arcs will be split.

Related features

Powerline pylon symbol

Related chapters

Section 3 chapters 3.2.4 and 5.11.3

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

POWERLINE PYLON SYMBOL

A cartographic feature to complete powerline symbology.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000

Feature Usage

Map

Spatial object

Representation	Point	
Planimetric Accuracy	9999 / -	
Feature code	pylon	
Coverage (see Section 3 chapter 4)	5	

Data Attributes

GEODATA and working database

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
540

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology;

ORIENTATION (orientation) [binary; 4,5,B] Orientation in whole degrees from East going anti-clockwise; 0 - 180

General Notes

The placement of Powerline pylon symbols is for cartographic purposes only and does not match real world entities.

GEODATA

Map

The Powerline pylon symbol should be oriented such that it does not appear ‘upside down’ when viewed from the southern neatline.

Powerline pylon symbols will be placed a minimum of 20 mm and a maximum of 30 mm apart along Powerlines. Powerline pylon symbols will be placed to avoid clashes with other map detail. Powerline pylon symbols will be regularly spaced along powerlines where this can be achieved without clashing with other detail.

Powerline pylon symbols will be aligned so that the long axis of the symbol is perpendicular with the Powerline.

Data rules

Powerline pylon symbols must fall exactly on the underlying Powerline feature. If necessary a vertice will be added to ensure the Powerline and the Powerline pylon symbol are coincident with one another.

Related features

Powerline

Related chapters

Section 3 chapter 5.9 and 5.11.2

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

PROHIBITED AREA

Area into which entry is prohibited without permission from the controlling authority.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		500000	3125000

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	proh_a	
Coverage (see Section 3 chapter 4)	1	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.4)

AUTHORITY CODE (authority) [Integer; 4,4,I] Code for identifying controlling authority

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>2

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
0

General Notes

At 1:250 000 all prohibited areas should be fully revised using the NPIL database clip supplied. All features in the NPIL database meeting the size and other selection criteria will be included in the new database. The only exceptions to this rule are those prohibited areas in the base Series 2 data with an authority code of 9999 or 0 which do not have an equilivant feature in NPIL as well as any additional features which may appear on the source map (when the source map is not the previous edition NTMS). These features should be reviewed against the project file and if no instruction has been supplied the producer should seek clarification from Geoscience Australia on how and/or if these features should be represented in the revised database.

At 1:100 000 size and other selection criteria apply to all feature occurrences. All features in the NPIL database clip supplied will be included which meet the selection criteria. Feature occurrences on the latest previous edition map or in base material/digital data (e.g. state mapping databases) meeting the selection criteria but which do not have an equilivant feature in the NPIL database should be reviewed against the project file. If a feature is not addressed in the project file the

producer should seek clarification from Geoscience Australia on how and/or if the feature should be represented in the revised database.

The Authority code for prohibited areas should not be populated with a value of 0. All prohibited areas obtained from miscellaneous sources (e.g. previous edition map or special instruction) whose authority is not known should have an authority value of 9999 (other not specfied).

Prohibited areas will be named if names are included in the supplied material.

GEODATA

Map

Prohibited areas are to have an accompanying note ‘prohibited area’ unless the words ‘prohibited area’ are included in the name. Type style for this note will be that specified for ‘notes for areas restricted access’ Section 2 chapter 6.1. Where the reserve is identified by a number, only the reserve type will be shown.

Data rules

Prohibited areas will be bounded by a Prohibited area line.

Prohibited areas cannot overlap other Security area polygons.

Related features

Prohibited area line and Tile edge

Related chapters

Section 3 chapters 3.2.4 and 5.17

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

PROHIBITED AREA LINE

The boundary of a prohibited area or prohibited area void polygon.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	proh_a_l	
Coverage (see Section 3 chapter 4)	1	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>1

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
64 Single boundary
641 Dual boundary
0 Boundary coincident with coastline

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Offset from coincident features in millimetres The offset will move the feature to the left when viewed from start node to end node.

TEXT NOTE (text_note) [character; 50,50,C] Descriptive note to appear on map

General Notes

Where different Reserves are separated by a linear feature such as a road two Reserve lines will be shown each at greater than 50 metres at 1:250 00 and 20 metres at 1:100 000 from the feature separating the reserves. Road reserves will not be shown through Prohibited areas.

GEODATA

Map

When a Prohibited area line of symbol number 64 follows linear features symbolised in red, reflex blue or black the Reserve line will be offset from the other feature. The FEATURE WIDTH value will be such that there will be a gap of 0.15 mm between the respective symbols. For example, where a

Reserve line is coincident with a principal Road the FEATURE WIDTH value will be 0.75 (0.15 plus half the width of the principal road symbol (0.45) plus half the width of the Prohibited area line's symbol (0.15)).

The Prohibited area line symbol will not be offset from Reserve line symbols if they are not also coincident with another symbolised linear feature.

Area symbols will be masked for the Prohibited area line verge.

Boundaries of prohibited areas formed by, and coincident with, the coastline will not be shown. (See Section 2 chapter 5.8.)

At 1:100 000 a descriptive note may be added on the map where a prohibited area boundary is not displayed because it follows the coastline, for example ' prohibited area boundary follows coastline'.

Data rules

Prohibited area lines will bound Prohibited areas and Prohibited area voids.

Prohibited area lines of symbol number 64 will be digitised such that the reserve is on the left going from start node to end node.

Where the Prohibited area line has a similar shape to another feature, such as a Road, Reserve line, Watercourse, Waterline or Railway, and is within 50 metres at 1:250 000 and 20 metres at 1:100 000 of the feature, then the relevant section of Prohibited area line will be coincident with this other feature. Where the lines are of similar shape but the distance separating them is greater than 50 metres at 1:250 000 and 20 metres at 1: 100 000 the prohibited area line will be made coincident with the feature if it appears the Prohibited area line should be following the feature, for example where the boundary is following a stream line.

Related features

Built-up area line, Prohibited area, Prohibited area void, Railway, Road Watercourse, and Waterline

Related chapters

Section 2 chapters 2.9 and 5.8
Section 3 chapters 5.7, 5.8, 5.11.2, and 5.17

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

PROHIBITED AREA VOID

A void in a prohibited area.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		62500	390625

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	proh_a_void	
Coverage (see Section 3 chapter 4)	1	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>2

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
0

General Notes

GEODATA

Map

Data rules

Prohibited area voids will be bounded by a Prohibited area line.

Prohibited area voids cannot overlap other Security area polygons.

Related features

Prohibited area line and Tile edge

Related chapters

Section 1 chapter 3.8.2

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

RAILWAY

A transportation system using one or more rails to carry freight or passengers.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
5 mm			

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	railway	
Coverage (see Section 3 chapter 4)	r	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] Name of the railway line

TRACKS (tracks) [integer; 1,1,I] Code for number of tracks;
1 - One
2 - Multiple
3 - Unknown

STATUS (status) [integer; 1,1,I] Code for operational status;
1 - Operational
2 - Abandoned
3 - Under Construction

GAUGE (gauge) [integer; 1,1,I] Code for gauge
0 - Not applicable
1 - Standard : 1435 mm
2 - Broad : 1600 mm
3 - Narrow : 1067 mm
4 - Other
5 - Unknown
6 - standard-broad
7 - standard-narrow

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>1

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol numbers applicable:

206 Single
210 Multiple
208 Light
209 Abandoned
0 Railway coincident with jetty

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features (see Section 3 chapter 5.15).

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences. Dismantled railways, including those on the latest previous edition map or base data/material will not be shown.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist. Dismantled railways, including those on the latest previous edition map or base data/material will not be shown.

All railways and permanent sections of light railways will be shown. Short lengths of light railways in position only during the seasonal harvesting of crops will be omitted.

Light railways are lightly constructed railways or tramways used for special purposes, for example scenic railways.

Where railways exist upon a jetty they must be coincident for the length of the railway.

GEODATA

Map

All railways, including sidings and marshalling yards should be shown to scale if greater than the minimum size criteria.

Where scale limits the depiction of all tracks, show only those that depict a general representative pattern.

Railways will be labelled with their name. Railway lines will be labelled with their appropriate gauge width (eg. gauge 1435mm) where known. Abandoned railways will be labelled ‘abandoned’.

Railways will be masked where black type unavoidably overprints the feature. The break measurement will be 0.2 mm on either side of the type where it crosses the feature. (Note: the feature will be masked only on the map and will be complete in the data.)

Data rules

Nodes will appear at all Railway intersections.

Railways cannot overlap Canal areas, Perennial lakes, Perennial watercourse areas, Reservoirs or Sea except when coincident with a Jetty.

Railways cannot intersect Cliff, Cutting and Embankment lines.

Related features

Ferry route, Prohibited area line, Railway bridge, Railway causeway, Railway station, Railway tunnel, Reserve line and Transition point

Related chapters

Section 1 chapter 3.8.6 Section 2 chapter 2.2.3 Section 3 chapter 5.11.2

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

RAILWAY BRIDGE

A structure erected over a depression or obstacle to carry rail traffic.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Point	Chain
Planimetric Accuracy	100 / 40	100 / 40
Feature code	bridge_rl_p	bridge_rl_l
Coverage (see Section 3 chapter 4)	r	r

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] Name of the railway line

TRACKS (tracks) [integer; 1,1,I] Code for number of tracks;
1 - One
2 - Multiple
3 - Unknown

STATUS (status) [integer; 1,1,I] Code for operational status;
1 - Operational
2 - Abandoned
3 - Under Construction

GAUGE (gauge) [integer; 1,1,I] Code for gauge
0 - Not applicable
1 - Standard : 1435 mm
2 - Broad : 1600 mm
3 - Narrow : 1067 mm
4 - Other
5 - Unknown
6 - standard-broad
7 - standard-narrow

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:

260 - (Point and line)
0 - Coincident road and rail bridge

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Width of symbol in millimetres
0.15 for bridge on light railway
0.25 for bridge on other railways

ORIENTATION (orientation) [binary; 4,5,B] Orientation in whole degrees from East going anti-clockwise; 0 - 360
Attribute for point only.

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features (see Section 3 chapter 5.15).

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

Only significant bridges will be shown. The significance of the bridge depends on the number of bridges in the vicinity, the importance of the road etc. As guidance, the selection from the latest previous edition map will be taken and a similar approach applied to any new bridges.

Bridges will be shown as points when they are shorter than .4 mm to scale. When the length is longer than .4 mm to scale, bridges will be shown as chains.

The railway line for which the bridge was made need no longer exist, however, to be shown the bridge must still exist.

The name attribute will be populated with the name of the Railway line to which the bridge relates.

GEODATA

Map

Bridges of distinctive construction may be labelled (e.g 'drawbridge','swing bridge').

Data rules

Bridges which carry both road and rail traffic will be held as coincident road bridge and railway bridge features in their respective layers.

Point Railway bridges must fall exactly over a node on the Railway feature.

Linear Railway bridges will replace the equivalent section of the Railway and must meet exactly on the node at each end of the Railway feature.

Railway bridges may be shown off the rail network if they are on a dismantled railway.

Related features

Railway and Road bridge

Related chapters

Section 3 chapters 5.8, 5.9 and 5.11.2

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

RAILWAY CAUSEWAY

An embankment of earth or masonry erected across open water or area subject to inundation and carrying a railway.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
2 mm			

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	causeway_rl	
Coverage (see Section 3 chapter 4)	r	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] Name of the railway line

TRACKS (tracks) [integer; 1,1,I] Code for number of tracks;
1 - One
2 - Multiple
3 - Unknown

STATUS (status) [integer; 1,1,I] Code for operational status;
1 - Operational
2 - Abandoned
3 - Under Construction

GAUGE (gauge) [integer; 1,1,I] Code for gauge
0 - Not applicable
1 - Standard : 1435 mm
2 - Broad : 1600 mm
3 - Narrow : 1067 mm
4 - Other
5 - Unknown
6 - standard-broad
7 - standard-narrow

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
245 - Rail only
0 - Coincident road and rail causeway

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Width of symbol in millimetres
0.15 - on light railway
0.25 – on other railways

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

The railway line for which the causeway was made need no longer exist, however, to be shown the causeway must still exist.

Causeways which carry both road and rail traffic will be held as coincident road causeway and railway causeway features in their respective layers.

The name attribute will be populated with the name of the Railway line to which the causeway relates.

GEODATA

Map

Railway causeways will be labelled ‘causeway’.

Data rules

Railway causeways will replace the equivalent length section of the Railway and must meet exactly on the node at each end of the Railway feature.

Railway causeways may be shown off the rail network if they are on a dismantled railway.

Related features

Railway and Road Causeway

Related chapters

Section 3 chapter 5.8 and 5.11.2

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

RAILWAY OVERPASS

A separation of surface levels constructed to prevent direct intersection with other rail or road networks.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
40			

Scales

1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	- / 40	
Feature code	overpass_rl	
Coverage (see Section 3 chapter 4)	r	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] Name of the railway line

TRACKS (tracks) [integer; 1,1,I] Code for number of tracks;
1 - One
2 - Multiple
3 - Unknown

STATUS (status) [integer; 1,1,I] Code for operational status;
1 - Operational
2 - Abandoned
3 - Under Construction

GAUGE (gauge) [integer; 1,1,I] Code for gauge
0 - Not applicable
1 - Standard : 1435 mm
2 - Broad : 1600 mm
3 - Narrow : 1067 mm
4 - Other
5 - Unknown
6 - standard-broad
7 - standard-narrow

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
266
0 - Coincident road overpass

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Width of symbol in millimetres
0.15 for overpass on light railway
0.25 for overpass on other railways

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

Only significant overpasses will be shown. The significance of the overpass depends on the number of overpasses in the vicinity, the importance of the road etc. As guidance, the selection from the latest previous edition map (if supplied) will be taken and a similar approach applied to any new overpasses.

The name attribute will be populated with the name of the Railway line to which the overpass relates.

GEODATA

Map

Data rules

Overpasses which carry both road and rail traffic will be held as coincident road overpass and railway overpass features in their respective layers.

Linear Railway overpasses will replace the equivalent section of the Railway and must meet exactly on the node at each end of the Railway feature.

Railway overpasses may be shown off the rail network if they are on a dismantled railway.

Related features

Railway and Road bridge, Road Overpass, Road and Rail Causeway

Related chapters

Section 3 chapters 5.8, 5.9 and 5.11.2

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

RAILWAY STATION

A recognised stopping place for trains where passengers may board or alight or freight be loaded or unloaded. There may or may not be a platform. The railway station may not be in use.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Point	
Planimetric Accuracy	100 / 40	
Feature code	rail_station	
Coverage (see Section 3 chapter 4)	r	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] Name of the railway station

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>1

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
222
0 – when situated on a underground railway

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology;
0

ORIENTATION (orientation) [binary; 4,5,B] Currently not used by symbology;
0

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features (see Section 3 chapter 5.15).

General Notes

All railway stations on operational and abandoned lines will be shown, including disused railway stations. An exception will be former railway stations where there is clear evidence that the buildings and associated structures no longer exist.

Former railway stations on dismantled railway lines will not be shown as railway stations. Their names will be depicted as Localities (place name) if the same name is not in use for another Locality place name, Locality populated place or Built-up area feature. Unless there is clear evidence they no longer exist, the buildings of former railway stations on dismantled railway lines will be shown as Building features

GEODATA

Map

Type for Railway stations which are cloned as localities (see Data rules) will be as specified for Railway stations and not Locality place names.

Abandoned railway stations on operational lines will be labelled '(abandoned)' outside Builtup Areas. Abandoned Railway stations on abandoned lines will not be so labelled.

Railway stations on underground lines will not be symbolised (e.g symbol = 0 non printing).

1:100 000: all railway stations will be named unless station is not symbolised.

1:250 000: railway stations within Built-up areas will only be named where space permits, all other railway stations will be named unless station is not symbolised.

Data rules

Railway stations will be coincident with a node on a railway line.

A Railway Station situated on a Jetty must be coincident with a vertex on both the Jetty and its associated Railway Line.

Railway stations will be cloned as a Locality place name if the same name is not in use for another Locality feature coded Place name or Populated place.

Related features

Locality (place name) and Railway

Related chapters

Section 3 chapters 5.11.1 and 5.11.2

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

RAILWAY TUNNEL

An artificial underground or underwater passage carrying a railway.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Point	Chain
Planimetric Accuracy	100 / 40	100 / 40
Feature code	tunnel_rl_p	tunnel_rl_l
Coverage (see Section 3 chapter 4)	r	r

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] Name of the railway line

TRACKS (tracks) [integer; 1,1,I] Code for number of tracks;
1 - One
2 - Multiple
3 - Unknown

STATUS (status) [integer; 1,1,I] Code for operational status;
1 - Operational
2 - Abandoned
3 - Under Construction

GAUGE (gauge) [integer; 1,1,I] Code for gauge
0 - Not applicable
1 - Standard : 1435 mm
2 - Broad : 1600 mm
3 - Narrow : 1067 mm
4 - Other
5 - Unknown
6 - standard-broad
7 - standard-narrow

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only
SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
205 – Line
0 - Point

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology; 0
Attribute for point only.

ORIENTATION (orientation) [binary; 4,5,B] Currently not used by symbology; 0
Attribute for point only.

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features (see Section 3 chapter 5.15).

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

Railway tunnels will be shown as points when they are shorter than 1 mm to scale. When the length is longer than 1 mm to scale, tunnels will be shown as chains.

Tunnels which carry both road and railway traffic will be held as a coincident road tunnel and railway tunnel feature in their respective layers.

GEODATA

Map

Railway tunnels may be named.

Data rules

The points of disappearance and emergence of Railway tunnel features will be shown by the feature Transition point.

Point Railway tunnels will be coincident with a node on a railway line.

Linear Railway tunnels will replace the equivalent section of the Railway and must meet exactly on the node at each end of the Railway feature.

Railway tunnels may be shown off the rail network if they are on a dismantled railway.

Related features

Railway, Road tunnel and Transition point

Related chapters

Section 3 chapter 5.11.2

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

RAINFOREST

Vegetation community which contains key rainforest species, with a foliage cover greater than 70%

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		62500	390625

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	rainforest	
Coverage (see Section 3 chapter 4)	t	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>5

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
4

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

Polygons that are smaller than the minimum size for inclusion and are in groups may be aggregated into one larger representive polygon where they are less than 0.5 mm apart at map scale.

GEODATA

Map

Rainforest should be named where named on base material/digital data or rainforest revision source material. Type styles for named areas of rainforest will be those used for Vegetation features, see Section 2 chapter 8.4 (for 1:250 000) and 9.4 (for 1:100 000).

Data rules

Rainforest is bounded by a vegetation line feature.

Rainforest cannot overlap other vegetation type polygons.

Rainforest cannot overlap Open Cut, Building Area, Built-up area, Sand, Sand dunes, Aircraft facility polygons, Airport areas, Reservoirs, Settling ponds, Salt evaporators, Lakes, perennial Watercourse areas, Canal areas, Mangrove Flat or Sea.

Related features

Woody vegetation, Tile edge and Vegetation line.

Related chapters

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

RAPID

An area of broken, fast flowing water in a watercourse, where the slope of the bed increases (but without a prominent break of slope which might result in a waterfall), or where a gently dipping bar of harder rock outcrops.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
1 mm			

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	Polygon
Planimetric Accuracy	100 / 40	9999 / 9999
Feature code	rapid_l	rapid_a
Coverage (see Section 3 chapter 4)	d	w

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] Name of associated watercourse

PERENNIALITY (perennial) [integer; 1,1,I] Code for perenniality;
1 - Perennial

HIERARCHY (hierarchy) [integer; 1,1,I] Importance of associated watercourse
0 - Not Applicable
1 - Major
2 - Minor

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4 - feat_code “rapid_l”
<tile-id>5 - feat_code “rapid_a”

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
881 (Chain - major watercourse chain)
882 (Chain – minor watercourse chain)

881 (Polygon - watercourse polygon perennial)

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

Rapids are only to be shown in perennial streams.

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist or they are on a non-perennial stream.

Rapids in double line streams will be shown as area features.

GEODATA

Map

Rapids will be labelled 'rapid' if rapid is not included in the name.

Data rules

A rapid polygon will be bounded by a Rapid area line in water and by waterline on the river banks.

Rapid chains break Watercourse chains with coincident nodes with the Watercourses at both ends of the Rapid chain.

Rapids will be digitised with the start node at the upstream end.

Rapids cannot overlap;
Sea, or Building areas.

Related features

Connector, Rapid area line, Tile edge, Watercourse and Waterline

Related chapters

Section 3 chapter 5.7

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

RAPID AREA LINE

The boundary of a rapid area polygon.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	rapid_a_l	
Coverage (see Section 3 chapter 4)	w	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
0

General Notes

See Rapid

GEODATA

Map

Data rules

Rapid area lines will bound Rapid polygons

Related features

Rapid

Related chapters

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

RAZORBACK

A Long and Narrow upland with Steep Sides

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
5 mm			

Scales

1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	- / 40	
Feature code	razorback	
Coverage (see Section 3 chapter 4)	m	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
929

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

Height of razorbacks are to be indicated by the use of spot elevations where available.

GEODATA

Map

Contour & Auxiliary Contours will be broken for razorbacks.

Razorbacks will be named where named on the latest previous edition map unless adjacent development means this would lead to clutter.

Razorback symbols will be masked where black type unavoidably overprints the feature. The break measurement will be 0.2 mm on either side of the type where it crosses the feature. (Note: the feature will be masked only on the map and will be complete in the data.)

Data rules

Razorbacks cannot appear in; Sea, Lakes,Reservoirs, Building Area and Offshore Polygons. Razorbacks cannot intersect Watercourse, Roads and Railways

Related features

Cliff , Contour

Related chapters

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

REEF

An area of rock or coral that is exposed between mean high water and lowest tide, or just below approximate lowest tide, which is visually prominent or a hazard to shipping.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		62500	390625

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	reef	
Coverage (see Section 3 chapter 4)	o	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The Reef's name

RELATIONSHIP (relationship) [Integer; 1,1,I] Code for relationship to sea level;
4 - Bare
5 - Tidal
6 - Submerged

REEF CODE (reef)
[Integer; 1,1,I] Code for type of reef:
1 - Reef, Cay
2 - Shoal, Bank, Patch

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>5

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
97 for Reef and Cay
0 for Shoal, Bank, Patch

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

For new features when the area is smaller than the minimum size and REEF code would be 1 (Reef, Cay), the feature 'offshore rock' will be used.

GEODATA

Map

Reefs should be named, where name is known.

Descriptive notes may be included.

Data rules

Reefs cannot overlap other Offshore coverage polygons, Mainland or Islands.

Reef will be bounded by Offshore line features

Related features

Offshore line, Offshore rock, Spot elevation and Tile edge

Related chapters

Section 3 chapter 3.2.4

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

RELIEF AREA LINE

The line bounding a Crater, Distorted Surface, Open cut, Relief area void, Rocky outcrop, Sand or Sand dune polygon

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	rel_area_l	
Coverage (see Section 3 chapter 4)	q	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>1 - if surround “open cut”
<tile-id>4 - if not surround “open cut”

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
Note: The Relief area line feature can bound various polygon types & will have its symbol number changed accordingly. The symbol numbers shown apply to Relief area lines bounding the following features.

Line symbol;	*Polygon area bounded;*
90	*Crater*
90	*Distorted Surface*
102	*Open cut*
912	*Rocky outcrops*
0	*Sand*
0	*Sand dunes*

General Notes

GEODATA

Map

Where symbolised, relief area lines will be masked where black type unavoidably overprints the Feature. The break measurement will be 0.2 mm on either side of the type where it crosses the feature. (Note: the feature will be masked only on the map and will be complete in the data.)

Where the boundary of an area of Distorted Surface, Rocky Outcrops, Sand and Sand Dunes has a similar shape to another natural feature such as a cliff, the relevant section of Relief Area Line will be made coincident with this other feature.

Data rules

Relief area lines will bound Crater, Distorted Surface, Open cut, Relief area void, Rocky outcrop, Sand and Sand dune polygons.

Relief area lines cannot overlap;
Sea, Watercourse areas, Canal areas, Lakes and Reservoirs.

Related features

Crater, Distorted surface, Open cut/mining area, Relief area void, Rocky outcrop, Sand, Sand dune and Vegetation line

Related chapters

Section 3 chapter 5.11.2

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

RELIEF AREA VOID

An empty or void area in a Distorted Surface, Open cut, Rocky outcrop, Sand or Sand dune polygon.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		10000	62500

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	rel_a_void	
Coverage (see Section 3 chapter 4)	q	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>5

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
0

General Notes

GEODATA

Map

Data rules

Relief area voids will be bounded by a relief area line feature.

Relief area voids cannot overlap other Relief area coverage polygons.

Related features

Relief area line and Tile edge

Related chapters

Section 1 chapter 3.8.2

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

RESERVE - INDIGENOUS AREA

Land reserved due to its Indigenous significance, (excludes freehold land).

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		500000	3125000

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	abor_res	
Coverage (see Section 3 chapter 4)	3	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The Indigenous area's name

AUTHORITY CODE (authority) [Integer; 4,4,I] Code for identifying controlling authority

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>2

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
0

General Notes

Reserve - Indigenous areas included in the NPIL data base and meeting the size criteria will be shown. Where a Reserve-Indigenous Area is broken into a number of areas each area will be shown regardless of size if the total area of the reserve meets the size criteria.

The Authority code for reserve areas should not be populated with a value of 0. All reserves whose authority is not known or whose authority does not fit within the current categories specified in section 3 5.17 NPIL database, should have a authority value of 9999 (other not specfied).

Indigenous sacred sites will not be named as sacred sites on the map even if named on a previous edition map, but the feature may be a lake, pool or waterhole in which case the appropriate map symbol and hydrological name will be used.

GEODATA

Map

Reserve - Indigenous areas will be named.

Data rules

Reserve - Indigenous areas will be bounded by a reserve line feature. Reserve - Indigenous areas cannot overlap other reserved areas coverage polygons ie. two differing reserve types cannot share a common polygon area.

Related features

Reserve line and Tile edge

Related chapters

Section 3 chapters 3.2.4 and 5.17

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

RESERVE - FORESTRY

Public land reserved for forestry purposes.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		500000	3125000

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	forest_res	
Coverage (see Section 3 chapter 4)	3	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The Reserve - Forestry's name

AUTHORITY CODE (authority) [Integer; 4,4,I] Code for identifying controlling authority

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>2

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
0

General Notes

Reserve - Forestry areas included in the NPIL database and meeting the size criteria will be shown. Where a Reserve-Forestry Area is broken into a number of areas each area will be shown regardless of size if the total area of the reserve meets the size criteria.

The Authority code for reserve areas should not be populated with a value of 0. All reserves whose authority is not known or whose authority does not fit within the current categories specified in section 3 5.17 NPIL database, should have a authority value of 9999 (other not specfied).

GEODATA

Map

Reserve - Forestry features will be named where named in the NPIL database. Where the reserve is only identified by a number only the reserve type will be shown.

Data rules

Reserve - Forestry features will be bounded by a reserve line feature. The Forestry Reserve area cannot overlap other reserved areas coverage polygons. ie. two differing reserve types cannot share a common polygon area.

Related features

Reserve line and Tile edge

Related chapters

Section 3 chapters 3.2.4 and 5.17

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

RESERVE - NATURE CONSERVATION

Land reserved for the conservation of native species.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		500000	3125000

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	nat_res	
Coverage (see Section 3 chapter 4)	3	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The Reserve - Nature conservation's name.

AUTHORITY CODE (authority) [Integer; 4,4,I] Code for identifying controlling authority

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>2

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
0

General Notes

Reserve - Nature conservation areas included in the NPIL database and meeting the size criteria will be shown. Where a Reserve-Nature Conservation Area is broken into a number of areas each area will be shown regardless of size if the total area of the reserve meets the size criteria.

The Authority code for reserve areas should not be populated with a value of 0. All reserves whose authority is not known or whose authority does not fit within the current categories specified in section 3 5.17 NPIL database, should have a authority value of 9999 (other not specfied).

Indigenous sacred sites will not be named as sacred sites on the map even if named on a previous edition map, but the feature may be a lake, pool or waterhole in which case the appropriate map symbol and hydrological name will be used.

GEODATA

Map

Reserve - Nature Conservation features will be named where named in the NPIL database. Where the reserve is only identified by a number only the reserve type will be shown.

Data rules

Reserve - Nature Conservation features will be bounded by a reserve line feature. The Nature Conservation Reserve area cannot overlap other reserved areas coverage polygons. ie. two differing reserve types cannot share a common polygon area.

Related features

Park, Reserve line and Tile edge

Related chapters

Section 3 chapters 3.2.4 and 5.17

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

RESERVE - WATER SUPPLY

Land reserved to protect water supply catchments.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		500000	3125000

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	water_res	
Coverage (see Section 3 chapter 4)	3	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The Reserve - Water supply's name

AUTHORITY CODE (authority) [Integer; 4,4,I] Code for identifying controlling authority

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>2

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
0

General Notes

Reserve - Water Supply Areas included in the NPIL database and meeting the size criteria will be shown. Where a Reserve-Water Supply Area is broken into a number of areas each area will be shown regardless of size if the total area of the reserve meets the size criteria.

The Authority code for reserve areas should not be populated with a value of 0. All reserves whose authority is not known or whose authority does not fit within the current categories specified in section 3 5.17 NPIL database, should have a authority value of 9999 (other not specfied).

GEODATA

Map

Reserve - Water Supply features will be named where named in the NPIL database. Where the reserve is only identified by a number only the reserve type will be shown.

Where a Water Supply Reserve surrounds, or is coincident with a waterbody of the same root name, name the waterbody in the Waterbodies cover and do not name the Water Supply Reserve.

Data rules

Reserve - Water Supply features will be bounded by a reserve line feature.

The Water Supply Reserve area cannot overlap other reserved areas coverage polygons. ie. two differing reserve types cannot share a common polygon area.

Related features

Reserve line and Tile edge

Related chapters

Section 3 chapters 3.2.4 and 5.17

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

RESERVE LINE

The boundary of a reserved area polygon.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	res_a_l	
Coverage (see Section 3 chapter 4)	3	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>1

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
65 - Single boundary
68 - Dual boundary not coincident with another feature
681 – Dual boundary coincident with another symbolised feature
0 - Boundary coincident with coastline

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Offset from coincident features in millimetres. The offset will move the feature to the left when viewed from start to node to end node.

TEXT NOTE (text_note) [character; 50,50,C] Descriptive note to appear on map

General Notes

Road reserves, powerline reserves and other linear feature reserves will not be shown through reserve areas.

GEODATA

Map

When a Reserve line of symbol number 65 follows linear features symbolised in red, reflex blue or black the Reserve line will be offset from the other feature. The FEATURE WIDTH value will be

such that there will be a gap of 0.15 mm between the respective symbols. For example, where a Reserve line is coincident with a principal Road the FEATURE WIDTH value will be 0.725 (0.15 plus half the width of the principal road symbol (0.45) plus half the width of the Reserve line's symbol (0.125)).

The Reserve line symbol will not be offset from coincident Prohibited area line symbols unless the two lines are also coincident with another symbolised feature.

Boundaries of reserves formed by, and coincident with, the coastline will not be shown. Such boundaries will have Symbol 0. (See Section 2 chapter 5.8.). This rule may be overridden in areas where not showing the boundary along the coastline causes ambiguity.

At 1:100 000 a descriptive note may be added on the map where a reserve boundary is not displayed because it follows the coastline, for example ' Reserve boundary follows coastline'

Data rules

Reserve line features will bound Reserve - Indigenous area, Reserve - Forestry, Reserve - Nature Conservation, Reserve - Water Supply and Reserve Void features.

Reserve lines of symbol 65 will be digitised such that the reserve is on the left going from start node to end node.

Where the Reserve line has a similar shape to another feature, such as a Road, Watercourse, Waterline or Railway, and is within 50 metres at 1: 250 000 and 20 metres at 1:100 000 of the feature, then the relevant section of Reserve line will be coincident with this other feature. Where the lines are of similar shape but the distance separating them is greater than 50 metres at 1:250 000 and 20 metres at 1:100 000 the Reserve line will be made coincident with the feature if it appears the Reserve line should be following the feature, for example where the boundary is following a stream line. These rules will not apply where two reserves are separated by a road reserve. In such cases the separation between the two boundaries will be maintained.

Where a Reserve area line has Reserve - Indigenous area, Reserve - Forestry, Reserve - Nature Conservation or Reserve - Water Supply on one side only it will be digitised such that the reserve is on the left going from start node to end node.

Related features

Built-up area line, Railway, Reserve - Indigenous area, Reserve - Forestry, Reserve - Nature conservation, Reserve - Water supply, Reserve void, Road, Watercourse and Waterline

Related chapters

Section 2 chapter 5.8
Section 3 chapters 5.7, 5.8 5.11.2 and 5.17

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

RESERVE VOID

A void in a reserved area.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		40000	250000

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	res_a_void	
Coverage (see Section 3 chapter 4)	3	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>2

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
0

General Notes

GEODATA

Map

Data rules

Reserve voids will be bounded by reserve lines.

Reserve voids cannot overlap other reserved areas coverage polygons. ie. two differing reserve types cannot share a common polygon area.

Related features

Reserve line and Tile edge

Related chapters

Section 1 chapter 3.8.2

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

RESERVOIR

A body of water collected and stored behind a constructed barrier for some specific use.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		22500	140625

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	reservoir	
Coverage (see Section 3 chapter 4)	w	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The Reservoir's name ie the name of the water body not the dam wall.

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>2

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
10

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features (see Section 3 chapter 5.15).

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

New reservoirs smaller than 140625 sq. m at 1:250 000 or 22500 sq. m at 1:100 000. will be shown as a Water tank feature.

In densely and moderately settled regions as defined by Appendix C where a Dam wall meets the minimum size criteria, the attached reservoir should be shown regardless of whether or not it is

below the minimum size criteria for reservoirs. If a reservoir no longer exists (ie. filled with sediment) then the dam wall will not be shown.

GEODATA

Map

Reservoirs will be named where named in the base material/digital data or revision source material supplied.

Reservoirs are to have an accompanying descriptive note e.g.: aquarium for features not being used directly for human or livestock consumption.

Reservoirs will mask Parks.

Data rules

Reservoirs will be bounded by the waterline feature and segments may be bounded by a Junction feature. (See Section 1, 3.8.4).

Reservoirs cannot overlap ;
Relief area coverage features (except voids), Sand ridges, Roads and Railways (except bridges, tunnels or fords), Waterpoints, Survey marks, other waterbody coverage polygons, Built-up area, Streams of any sort (except connectors), Spot elevations, Sea, Buildings, Vegetation coverage features of any type (except voids), Morphology coverage features, Navigation coverage features, Aircraft facilities and Seismic lines/Cleared lines.

Related features

Connector, Dam, Junction, Lake, Spillway, Tile edge, Water tank, Watercourse and Waterline

Related chapters

Section 1 chapters 3.2.4, 3.8.3, 3.8.4 and 3.8.9
Section 3 chapter 6.9.2

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

ROAD

A route for the movement of vehicles, people or animals.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
5 mm			

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	road	
Coverage (see Section 3 chapter 4)	v	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The name of the road. (see Section 3 chapter 6.7.1)

CLASSIFICATION (class) [Integer; 1,1,I] The road's classification;
1 - Dual Carriageway
2 - Principal Road
3 - Secondary Road
4 - Minor Road
5 - Track

FORMATION (formation) [integer; 1,1,I] Type of road surface;
1 - Sealed
2 - Unsealed
3 - Unknown
4 - Under construction

NATIONAL ROUTE NUMBER (NRN) [character; 12,12,C] The national route number/s assigned to the road (if multiple numbers, delimited by a minus sign). Alpha characters in this field are to be in upper case.

STATE ROUTE NUMBER (SRN) [character; 12,12,C] The state route number/s assigned to the road (if multiple numbers, delimited by a minus sign). Alpha characters in this field are to be in upper case.

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>1 - class not 5
<tile-id>4 - class 5

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol numbers applicable:
250 – Dual carriageway
251 - Principal sealed
258 - Principal unsealed
256 - Secondary sealed
259 - Secondary unsealed
257 - Minor sealed
253 - Minor unsealed
254 - Vehicular track
252 - Under construction

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Feature width is only used for roads under construction (symbol 252). All other roads will have a feature width of '0'. The width of symbol 252 reflects the road classification, the following values will be used:

Feature width; Road class;
0.9 - Dual carriageway
0.9 - Principal road
0.6 - Secondary road
0.4 - Minor road
0.2 - Vehicular track

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features (see Section 3 chapter 5.15).

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences. An exception will be minor roads in built up areas which will be treated as per the rules below.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist. An exception will be minor roads in built up areas which will be treated as per the rules below.

Road classifications will be as shown on the roads revision source material supplied.

Classifications are:
Dual carriageway - Divided Highway, Freeway, Tollway, or other major roads with separated carriageways in opposite directions.
Principal Road: - Highways, major through routes and major connecting roads as defined by the Australian Automobile Association (AAA) or other approved revision source material.
Secondary road: - Connecting roads that provide a connection between major through routes and/or major connecting roads, or connections between regional centres.
Minor road: - All other roads which form part of the public roads system between Principal roads and Secondary roads.
Vehicle tracks: - Public or private roadways of minimum or no construction which are not necessarily maintained.

Roads not shown on the authorised roads revision source material will maintain the classification on the latest previous edition map at scale or base material/digital data. Where the latest previous edition map uses a different road classification the least important class will be used. For example, road will be classified as minor road. Where use of the latest previous edition map or data would result in an illogical connection, for example if a secondary road connects only to minor roads, a logical connection will be used.

Roads will not be added only from interpretation of the imagery. However obvious road realignments may be captured when significant.

Where the carriage ways of a dual carriageway are separated by less than 1 mm at map scale the dual carriageway will be symbolised using symbol 250. If the separation of the carriageways is greater than 1mm at map scale, each carriageway will be shown in its true position, classified as principal road and have symbol number 251.

For detailed rules regarding situations involving roads, vehicle tracks, fences and vermin proof fences please refer to Appendix A page 106 Fence.

All dual carriageways and principal roads will be named. Secondary roads should be named where named on the latest previous edition map or data, or on the roads revision source material supplied.

At 1:250 000 minor roads and vehicular tracks will be named where named on the base Series 2 data unless there is clear evidence they no longer exist. No new names for Minor roads and vehicular tracks will be added in densely settled regions as defined by Appendix C. New names for Minor roads and vehicular tracks will be added in sparsely settled regions as defined by Appendix C where named on road revision source material supplied. A selection of new names for Minor roads and vehicular tracks may be added in moderately settled regions as defined by Appendix C, these should be taken from the roads revision source material supplied. In moderately settled regions preference should be given to minor roads and vehicular tracks which consititute through routes and/or lead to cultural or natural features.

At 1: 100 000 minor roads and vehicular tracks will be named where named on the base material/digital data (e.g. state mapping source) unless there is clear evidence they no longer exist. New names for Minor roads and vehicular tracks will be added where named on road revision source material supplied.

All dual carriageways, principal and secondary roads will be shown including those in built-up areas.

At 1:250 000 minor roads entering a builtup area will be continued to the first intersection with a dual carriageway, principal or secondary road. Minor roads totally contained in built-up areas will not be shown. This rule extends to other features in the built-up area layer where they are surrounded by a built-up area.

At 1:100 000 minor roads entering a builtup area will be continued to the first intersection with a major through route (preference should be given to intersections with dual carriageways, principal or secondary roads). In addition, sufficient minor roads will be shown to reflect the Built-up Area's road pattern. Select the major through routes (from Primary Reference material) to reflect the road pattern within the area whilst avoiding clutter. This rule will also extend to other features in the built-up area layer where they are surrounded by a built- up area.

GEODATA

Map

All dual carriageways, principal & secondary roads will be named where name is known.

At 1:100 000 naming of minor roads and vehicular tracks should give preference to features which consititute through routes and/or lead to cultural or natural features. Density of detail should determine the number of names shown. If a previous edition 1:100 000 map has been supplied this should be used as a guide for which roads are to be named in the new product.

At 1: 250 000 naming of minor roads and vehicular tracks should be consistent with name content in the digital data, subject to generalisation rules and clutter considerations.

Outside built-up areas, roads and highways should be named as above. The main roads through built-up areas may be named where space permits.

Roads under construction will be labelled ‘under construction’.

Roads whose position is questionable will be labelled ‘position approximate’.

Vehicle tracks labelled as ‘four-wheel drive’ on previous edition maps will not be labelled as such on the new product, as legend indicates ‘access and condition not assured’.

The road subclass ‘Dual Carriageway’ will mask all other road subclasses (e.g. ‘Principle Road’, ’Secondary Road’, ’Minor Road’, ’Track’).

Data rules

Roads will have nodes at all intersections.

Roads cannot overlap;
Sea, Reservoir, Perennial Lakes, Canal areas, Perennial Watercourse areas.

Roads cannot intersect cliff, cutting and embankment lines.

Related features

Built-up area line, Ferry route, Ford, Gate, Kilometric distance indicator, Locality, Prohibited area line, Road bridge, Road causeway, Road destination arrow, Road on dam, Road tunnel, Route marker - National, Route marker - State, Reserve line, Stock grid and Transition point

Related chapters

Section 1 chapters 3.2 and 3.8.6
Section 2 chapter 2.2.3
Section 3 chapters 3.2.4, 5.8, 5.11.2, 6.5.3 and 6.7
Appendix C

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

ROAD BRIDGE

A structure erected over a depression or obstacle to carry road traffic.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Point	Chain
Planimetric Accuracy	100 / 40	100 / 40
Feature code	bridge_rd_p	bridge_rd_l
Coverage (see Section 3 chapter 4)	v	v

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The name of the road on which the bridge is located.

CLASSIFICATION (class) [Integer; 1,1,I] The road's classification;
1 - Dual Carriageway
2 - Principal Road
3 - Secondary Road
4 - Minor Road
5 - Track

FORMATION (formation) [integer; 1,1,I] Type of road surface;
1 - Sealed
2 - Unsealed
3 - Unknown
4 - Under construction

NATIONAL ROUTE NUMBER (NRN) [character; 12,12,C] The national route number/s assigned to the road (if multiple numbers, delimited by a minus sign). Alpha characters in this field are to be in upper case.

STATE ROUTE NUMBER (SRN) [character; 12,12,C] The state route number/s assigned to the road (if multiple numbers, delimited by a minus sign). Alpha characters in this field are to be in upper case.

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
260 (Point and line)
0 (Point) When in close proximity to other features causing clutter.

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] The width of the symbol determined by the road classification (in millimetres);

Width; Road class;
0.9 - Dual Carriageway
(note; width varies)
0.9 - Principal road
0.6 - Secondary road
0.4 - Minor road
0.2 - Vehicular track
*** - Under construction*
** * use appropriate*
road width.

ORIENTATION (orientation) [binary; 4,5,B] Orientation in whole degrees from East going anti-clockwise; 0 - 360
Attribute for point only.

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features (see Section 3 chapter 5.15).

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences. Road bridges will not be included when the road crossing the bridge has been removed within a Built-up area (see Road).

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist or unless the road crossing the bridge has been removed within a Built-up area (see Road).

Only significant bridges will be shown. The significance of the bridge depends on the number of bridges in the vicinity, the importance of the road etc.

Bridges will be shown as points when they are shorter than 0.4 mm to scale. When the length is longer than 0.4 mm to scale, bridges will be shown as chains.

The road for which the bridge was made need no longer exist, however, to be shown the bridge must still exist.

Bridges which carry both road and rail traffic will be held as coincident road bridge and railway bridge features in their respective layers.

The name attribute will be populated with the name of the Road to which the bridge relates.

GEODATA

Map

Bridges of distinctive construction may be labelled (e.g 'drawbridge','swing bridge').

Where clutter would occur by symbolising a point bridge feature, the point bridge may be symbolised to symbol number ‘0’ non-printing value.

Data rules

Road bridges may be shown off the road network if they are on a dismantled road.

Point Road bridges must fall exactly over a node on the Road feature.

Linear Road bridges break Road chains with coincident nodes with the Roads at both ends of the Road bridge chain.

Related features

Ford, Railway bridge, Road and Road causeway

Related chapters

Section 3 chapters 5.8, 5.9, 5.11.2 and 6.7

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

ROAD CAUSEWAY

An embankment of earth or masonry erected across open water or an area subject to inundation and carrying a road.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
2 mm			

Scales

1:250 000 & 1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	causeway_rd	
Coverage (see Section 3 chapter 4)	v	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The name of the road on which the Causeway is located.

CLASSIFICATION (class) [Integer; 1,1,I] The road's classification;
1 - Dual Carriageway
2 - Principal Road
3 - Secondary Road
4 - Minor Road
5 - Track

FORMATION (formation) [integer; 1,1,I] Type of road surface;
1 - Sealed
2 - Unsealed
3 - Unknown
4 - Under construction

NATIONAL ROUTE NUMBER (NRN) [character; 12,12,C] The national route number/s assigned to the road (if multiple numbers, delimited by a minus sign). Alpha characters in this field are to be in upper case.

STATE ROUTE NUMBER (SRN) [character; 12,12,C] The state route number/s assigned to the road (if multiple numbers, delimited by a minus sign). Alpha characters in this field are to be in upper case.

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
245

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] The width of the symbol determined by the road classification (in millimetres);

Width; Road class;
0.9 - Dual Carriageway
(note; width varies)
0.9 - Principal road
0.6 - Secondary road
0.4 - Minor road
0.2 - Vehicular track
*** - Under construction*
** * use appropriate*
road width.

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

The road for which the causeway was made need no longer exist, however, to be shown the causeway must still exist.

Causeways which carry both road and rail traffic will be held as coincident road causeway and railway causeway features in their respective layers.

The name attribute will be populated with the name of the Road to which the causeway relates.

GEODATA

Map

Road causeways will be labelled ‘causeway’.

Data rules

Road causeways break Road chains with coincident nodes with the Roads at both ends of the Road causeway chain.

Related features

Ford, Railway causeway, Road and Road bridge

Related chapters

Section 3 chapters 5.8 and 5.11.2

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

ROAD DESTINATION ARROW

A symbol at the neatline of the map within the margin indicating the direction of a road's destination or objective.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

Map

Spatial object

Representation	Chain	
Planimetric Accuracy	9999 / 9999	
Feature code	arrow_dest	
Coverage (see Section 3 chapter 4)	5	

Data Attributes

GEODATA and working database

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
255 - with arrow head
42 - without arrow head (see Appendix B chapter 12)

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear in margin.

General Notes

At 1:250 000 road destination arrows and the name of the destination will be shown on the western and southern map edges only.

At 1:100 000 road destination arrows and the name of the destination will be shown from all edges of the bounding GDA94 Graticule.

Road destination arrows will normally be shown on dual carriageway, principal and secondary Roads. The use of Road destination arrows will be consistent with the use of Kilometric distance indicators, that is, Roads with distances shown will also have Road destination arrows where they meet the western and southern neatline (at 1:250 000) or the bounding GDA94 Graticule (at 1:100 000). When road destination arrows and related text unavoidably clash with Graticule values or are too close to the trim line,see Appendix B chapter 11 (for 1:250 00) or the 1:100 000 Layout Guide (for 1:100 000).

The destination will be a significant town or locality, generally on the adjoining map.

GEODATA

Map

The Road destination arrow will be placed in the map margin and will be oriented to show the direction of the destination point. The Road destination arrow will be labelled with the name of the destination and the road distance to the destination point, to the nearest kilometre from the neatline (at 1:250 000) or the bounding GDA94 graticule (at 1:100 000).

Data rules

Road destination arrows will be digitised such that the start node is at the map neatline(at 1:250 000) or the bounding GDA94 graticule (at 1:100 000) and the end node at the arrow head.

Related features

Road, Kilometric distance indicator

Related chapters

Section 3 chapter 5.7
Appendix B chapters 2, 3 and 11

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

ROAD ON DAM

The section of a road carried by a dam.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
1 mm			

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	road_on_dam	
Coverage (see Section 3 chapter 4)	v	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The name of the road on which the Road on dam is located.

CLASSIFICATION (class) [Integer; 1,1,I] The road's classification;
1 - Dual Carriageway
2 - Principal Road
3 - Secondary Road
4 - Minor Road
5 - Track

FORMATION (formation) [integer; 1,1,I] Type of road surface;
1 - Sealed
2 - Unsealed
3 - Unknown
4 - Under construction

NATIONAL ROUTE NUMBER (NRN) [character; 12,12,C] The national route number/s assigned to the road (if multiple numbers, delimited by a minus sign). Alpha characters in this field are to be in upper case.

STATE ROUTE NUMBER (SRN) [character; 12,12,C] The state route number/s assigned to the road (if multiple numbers, delimited by a minus sign). Alpha characters in this field are to be in upper case.

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>1

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
45

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] The width of the symbol determined by the road classification (in millimetres);

Width; Road class;
0.9 - Dual Carriageway
(note; width varies)
0.9 - Principal road
0.6 - Secondary road
0.4 - Minor road
0.2 - Vehicular track
*** - Under construction*
** * use appropriate*
road width.

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

The name attribute will be populated with the name of the Road to which the Road on dam relates.

GEODATA

Map

This feature will take precedence over the Dam feature.

Data rules

The Road on dam feature will be created by cloning the dam feature from the utilities cover, and reassigning the feature class to Road on dam in the roads cover. This feature will replace the relevant section of road. The start and endpoint of the road must snap exactly to the respective start and endpoint of the Road on dam symbol.

Roads on dams cannot overlap;
Sea, Reservoirs, Lakes, Canal areas, Watercourse areas.

Roads on dams cannot intersect; any Morphology coverage lines and Watercourse lines except a spillway and connector.

Roads on dams will have nodes at all intersections.

Related features

Dam and Road

Related chapters

Section 3 chapters 5.8 and 5.11.1

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

ROAD OVERPASS

A separation of surface levels constructed to prevent direct intersection with other road or rail networks.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
40			

Scales

1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	- / 40	
Feature code	overpass_rd	
Coverage (see Section 3 chapter 4)	v	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The name of the road on which the overpass is located.

CLASSIFICATION (class) [Integer; 1,1,I] The road's classification;
1 - Dual Carriageway
2 - Principal Road
3 - Secondary Road
4 - Minor Road
5 - Track

FORMATION (formation) [integer; 1,1,I] Type of road surface;
1 - Sealed
2 - Unsealed
3 - Unknown
4 - Under construction

NATIONAL ROUTE NUMBER (NRN) [character; 12,12,C] The national route number/s assigned to the road (if multiple numbers, delimited by a minus sign). Alpha characters in this field are to be in upper case.

STATE ROUTE NUMBER (SRN) [character; 12,12,C] The state route number/s assigned to the road (if multiple numbers, delimited by a minus sign). Alpha characters in this field are to be in upper case.

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
267

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] The width of the symbol determined by the road classification (in millimetres);

Width; Road class;
0.9 - Dual Carriageway
(note; width varies)
0.9 - Principal road
0.6 - Secondary road
0.4 - Minor road
0.2 - Vehicular track
*** - Under construction*
** * use appropriate*
road width.

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences. Road overpasses will not be included when the road crossing the overpass has been removed within a Built-up area (see Road).

Only significant overpasses will be shown. When a road overpasses another road (only), the overpass will **not** be shown if there are related on and off ramps for full road inter-access. These cases will be shown as standard intersections. When this information is not available then the assumption should be that there is no inter-access.

Overpasses which carry both road and rail traffic will be held as coincident road overpass and railway overpass features in their respective layers.

The name attribute will be populated with the name of the Road to which the overpass relates.

GEODATA

Map

Data rules

Linear Road overpasses break Road chains with coincident nodes with the Roads at both ends of the Road bridge chain.

Related features

Ford, Railway and Road bridge, Railway and Road causeway, Railway Overpass

Related chapters

Section 3 chapters 5.8, 5.11.2 and 6.7

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

ROAD TUNNEL

An artificial underground or underwater passage carrying a road.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Point	Chain
Planimetric Accuracy	100 / 40	100 / 40
Feature code	tunnel_rd_p	tunnel_rd_l
Coverage (see Section 3 chapter 4)	v	v

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The name of the road on which the tunnel is located.

CLASSIFICATION (class) [Integer; 1,1,I] The road's classification;
1 - Dual Carriageway
2 - Principal Road
3 - Secondary Road
4 - Minor Road
5 - Track

FORMATION (formation) [integer; 1,1,I] Type of road surface;
1 - Sealed
2 - Unsealed
3 - Unknown
4 - Under construction

NATIONAL ROUTE NUMBER (NRN) [character; 12,12,C] The national route number/s assigned to the road (if multiple numbers, delimited by a minus sign). Alpha characters in this field are to be in upper case.

STATE ROUTE NUMBER (SRN) [character; 12,12,C] The state route number/s assigned to the road (if multiple numbers, delimited by a minus sign). Alpha characters in this field are to be in upper case.

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol Number applicable;
205 – Line
0- Point

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology;
0
Attribute for point only.

ORIENTATION (orientation) [binary; 4,5,B] Currently not used by symbology; 0
Attribute for point only.

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features (see Section 3 chapter 5.15).

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

Road tunnels will be shown as points when they are shorter than 1 mm to scale. When the length is longer than 1 mm to scale, tunnels will be shown as chains.

Tunnels which carry both road and railway traffic will be held as a coincident road tunnel and railway tunnel feature in their respective layers.

The name attribute will be populated with the name of the Road to which the tunnel relates.

GEODATA

Map

Road tunnels may be named.

Data rules

Linear Road tunnels must meet exactly on the node at each end of the Road feature where they disappear and resurface.

The TEXT_NOTE field will be used to enter the name of the tunnel itself (note: the NAME field is used to enter the name of the road to which the tunnel is attached)

Related features

Railway tunnel, Road and Transition point

Related chapters

Section 3 chapters 5.11.2 and 6.7

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

ROCKY OUTCROP

An area of land where large rocks or boulders protrude from or rest on the surface.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		62500	390625

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	rocky_a	
Coverage (see Section 3 chapter 4)	q	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>5

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
90

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

New polygons that are smaller than the minimum size for inclusion and are in groups may be aggregated into one larger representative polygon where they are less than 0.5 mm apart at map scale.

GEODATA

Map

Rocky outcrops are to have an accompanying note ‘rocky outcrops’.

Data rules

Rocky outcrop polygons will be bounded by a Relief area line feature. Rocky outcrops cannot overlap; Other relief area coverage polygons, aeronautical points, Built-up area, Sea, Building area, Woody vegetation, Lakes, Reservoir, Watercourse area, Canal area and aeronautical area.

Related features

Relief area line and Tile edge

Related chapters

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

ROUTE MARKER - NATIONAL

The symbol printed over a road indicating a national route.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

Map

Spatial object

Representation	Point	
Planimetric Accuracy	9999 / 9999	
Feature code	route_nat	
Coverage (see Section 3 chapter 4)	5	

Data Attributes

GEODATA and working database

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol Number applicable;
27

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology;
0

ORIENTATION (orientation) [binary; 4,5,B] Currently not used by symbology;
0

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

Route markers are to be shown both inside and outside built-up areas.

Route markers will be placed at sufficient locations to enable the route to be readily identified for its whole length on a map.

A route marker will be placed on each route in close proximity to the map edge. See Section 2, chapter 5.9.

GEODATA

Map

The route number will be shown in the centre of the shield as annotation. Alpha characters in route numbers will be in upper case.

National route markers will generally be placed clear of other map detail, but where this is not possible they will mask all other detail except the route number.

Data rules

The route marker must be coincident with a node or vertice on the road feature to which it relates.

Related features

Annotation and Road

Related chapters

Section 2 chapter 5.9
Section 3 chapters 3.2.4, 5.11.2 and 6.7.2

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

ROUTE MARKER - STATE

The symbol printed over a road indicating a state route.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

Map

Spatial object

Representation	Point	
Planimetric Accuracy	9999 / 9999	
Feature code	route_state	
Coverage (see Section 3 chapter 4)	5	

Data Attributes

GEODATA and working database

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol Number applicable;
28 Standard symbol
281 – Oversize symbol

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology;
0

ORIENTATION (orientation) [binary; 4,5,B] Currently not used by symbology;

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

Route markers are to be shown both in and outside built-up areas.

Route markers will be placed at sufficient locations to enable the route to be readily identified for its whole length on a map.

The oversize symbol 281 will be used when the state route number annotation can not comfortably fit within the boundaries of the standard symbol. This will generally be the case when the state route number is formed by 3 or more characters.

A route marker will be placed on each route in close proximity to the map edge. See Section 2, chapter 5.9

GEODATA

Map

The route number will be shown in the centre of the rectangle as annotation. Alpha characters in route numbers will be in upper case.

State route markers will generally be placed clear of other map detail, but where this is not possible they will mask all other detail except the route number.

Data rules

The route marker must be coincident with a node or vertice on the road feature to which it relates.

Related features

Annotation and Road

Related chapters

Section 2 chapter 5.9
Section 3 chapters 3.2.4, 5.11.2 and 6.7.2

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

RUBBISH TIP

An area above ground for the disposal of rubbish.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		62500	

Scales

1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	- / 9999	
Feature code	tip	
Coverage (see Section 3 chapter 4)	b	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>5

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
0

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

GEODATA

Map

Features should be labelled ‘rubbish tip’.

Data rules

Rubbish tips will be bounded by a Built-up area line feature.

Related features

Built-up area line, Built-up area void and Tile edge

Related chapters

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

RUNWAY CENTRELINE

A symbol used to indicate the length and orientation of an airport's runway.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000

Feature Usage

Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / -	
Feature code	runway_c_l	
Coverage (see Section 3 chapter 4)	5	

Data Attributes

GEODATA and working database

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable;
706 licenced aircraft facility
0 unlicenced aircraft facility

General Notes

GEODATA

Map

Data rules

This chain will be the length of the runway, and correctly oriented.

All runway centrelines for all licenced aircraft facilities will be captured.

Runway centrelines >457metres (1500 feet) will be captured for unlicenced aircraft facilities.

Related features

Aircraft facility

Related chapters

Section 1 chapter 3.8.10

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

SALINE COASTAL FLAT

That nearly level tract of land between mean high water and the line of the highest astronomical tide.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		62500	390625

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	saln_cst_flt	
Coverage (see Section 3 chapter 4)	w	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>5

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable;
23

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features (see Section 3 chapter 5.15).

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

Polygons that are smaller than the minimum size for inclusion and are in groups may be aggregated into one larger representative polygon where they are less than 0.5 mm apart at map scale.

GEODATA

Map

A descriptive note is only required when the previous edition map, revision source material or a special instruction from Geoscience Australia indicates precise characteristics of the foreshore flat e.g. mud.

Data rules

Saline coastal flats will be bounded by the Waterline feature.

Saline coastal flat cannot overlap Sea, other Waterbody coverage polygons.

Related features

Junction, Tile edge and Waterline

Related chapters

Section 1 chapters 3.8.3 and 3.8.4
Section 3 chapter 6.9.3

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

SALT EVAPORATOR

A flat area, usually segmented, used for the commercial production of salt by evaporation.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		62500	390625

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	salt_evapor	
Coverage (see Section 3 chapter 4)	w	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>5

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
23

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

Levee banks or canals less than 5 mm in length at map scale will not be shown within salt evaporators.

Adjacent segments will be shown as one polygon, divided by salt evaporator internal lines.

GEODATA

Map

Salt evaporators will be labelled ‘salt evaporator’.

Data rules

Salt evaporators will be bounded by a Waterline feature. Salt evaporators cannot overlap ; Relief area coverage polygons (except voids), Building area, any Built-up area coverage feature, Aeronautical area, Sea, any Vegetation coverage feature (except voids)

Related features

Canal, Levee, Salt evaporator internal line, Tile edge and Waterline

Related chapters

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

SALT EVAPORATOR INTERNAL LINE

A levee bank or small canal within a salt evaporator.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
5 mm			

Scales

1:250 000
&
1:100 000

Feature Usage

Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	salt_ev_i_l	
Coverage (see Section 3 chapter 4)	5	

Data Attributes

GEODATA and working database

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
114
95 Warburton Groove only.

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

Levee banks or canals less than 5 mm in length at map scale will not be shown within salt evaporators.

The lines bounding the Warburton Groove feature should be included in the drainage coverage with a symbol 95, rather than symbol 114.

GEODATA

Map

Data rules

Must be entirely within a Salt Evaporator polygon.

Related features

Canal, Levee, Salt evaporator

Related chapters

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

SAND

An area predominantly covered with sand and devoid of vegetation.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		62500	390625

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	sand	
Coverage (see Section 3 chapter 4)	q	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>2

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
22

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

Note: where existing areas of sand are overlapped by newly defined Woody vegetation, Rainforest or Plantation by definition the sand feature no longer exists.

Polygons that are smaller than the minimum size for inclusion and are in groups may be aggregated into one larger representative polygon where they are less than 0.5 mm apart at map scale.

Sand will not be shown in area or braided watercourses. (See features Lake and Watercourse).

GEODATA

Map

Data rules

Sand will be bounded by a Relief area line feature. Sand cannot overlap; Other Relief area coverage polygons, any Vegetation coverage feature (except voids), Aeronautical areas, Lakes, Reservoirs, Watercourse areas, Canal areas or Sea.

Related features

Plantation, Rainforest, Relief area line, Woody vegetation, and Tile edge

Related chapters

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

SAND DUNES

Mounds of loose sand usually crescent shaped transverse to the prevailing winds.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		62500	390625

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	dunes	
Coverage (see Section 3 chapter 4)	q	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>5

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable;
25

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

Polygons that are smaller than the minimum size for inclusion and are in groups may be aggregated into one larger representative polygon where they are less than 0.5 mm apart at map scale.

GEODATA

Map

Data rules

Sand dunes will be bounded by a Relief area line feature. Sand dunes cannot overlap; Other Relief area coverage polygons, any Vegetation coverage feature (except voids), Aeronautical areas, Lakes, Reservoirs, Watercourse areas, Canal areas or Sea.

Related features

Relief area line and Tile edge

Related chapters

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

SAND RIDGE

Sand drifts in long ridges tending parallel to and elongating in the direction of the prevailing winds.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
1 mm			

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	sand_ridge	
Coverage (see Section 3 chapter 4)	s	

Data Attributes

GEODATA and working database

AVERAGE HEIGHT (average_height) [integer; 2,2,I] The average height of the Sand ridges above the surrounding country

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
33

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

The average height of the sand ridges attribute is to be populated, where the average height is shown on the latest previous edition map or compilation. Where the average height was not shown this attribute will be 0.

GEODATA

Map

Descriptive notes indicating the average height of the sand ridges are to be included, where the average height is shown on the latest previous edition map or compilation.

Data rules

Sand ridges cannot overlap:
Sea, Lakes, Reservoirs, Watercourses or Canals.

Related features

Related chapters

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

SEA

The water area surrounding the Australian continent and its offshore islands.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	sea	
Coverage (see Section 3 chapter 4)	f	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The Sea or ocean's name.

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>2

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
10

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features (see Section 3 chapter 5.15).

General Notes

The boundaries and names of Seas will be as defined by Appendix E - 'Limits of Oceans and Seas'.

Note: The sea feature class will be used for seas and oceans on Appendix E. 'Other waters' will be shown as localities. For example, on Burketown E5406 the sea feature will carry the name attribute 'ARAFURA SEA' and the Gulf of Carpentaria would be a locality of type place name.

If two seas/oceans appear on the one tile the boundary will be shown by a junction feature.

Where a sea is nested in an ocean the sea will take precedence.

GEODATA

Map

The names of seas will be shown.

The names of Oceans which overlap seas and 'other waters' shown on Appendix E - Limits of Oceans and Seas will be named. Such features will be stored in the working database as Annotation features.

Where space permits, areas of sea will include the note:
'CAUTION: THIS MAP IS NOT TO BE USED
FOR MARITIME NAVIGATION PURPOSES
Refer to the appropriate hydrographic chart for depth information'
The note will be in black, on three lines broken as above and centre justified. The first two lines will be UMC 10 point all caps and the third line will be UMC 5 point caps and lower case.

Data rules

Seas will be bounded by Waterline and Tile edge features. Seas may also be bounded by Junction and Sea wall features.

Sea cannot overlap other framework polygons.

Related features

Junction, Sea wall, Tile edge and Waterline

Related chapters

Section 1 chapter 3.9
Section 3 chapter 6.9.3
Appendix E

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

SEA WALL

A solid structure usually of concrete masonry or earth, built to prevent erosion or encroachment by the sea.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
1 mm			

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	sea_wall	
Coverage (see Section 3 chapter 4)	f	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
71

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

Only walls that form part of the coastline and are usually under daily tidal influence will be shown.

GEODATA

Map

Sea walls will be labelled ‘sea wall’. Wharves will not be labelled but may be named where named on the latest previous edition map.

Data rules

Sea walls form part of the coastline in the Framework cover, and will replace the equivalent section of waterline.

Wharves coincident with the coastline will be cloned as sea walls.

Related features

Built-up area line, Breakwater, Contour, Island, Jetty, Mainland, Sea, Vegetation line and Wharf

Related chapters

Section 1 chapter 3.8.11
Section 3 chapters 5.11.1 and 5.11.2

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

SEISMIC LINE/CLEARED LINE

A graded path in a straight line.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
10 mm			

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	seismic_l	
Coverage (see Section 3 chapter 4)	4	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
99

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:250 000 Seismic Lines/Cleared Lines shown on the base Series 2 data will be shown, unless there Is clear evidence they no longer exist. No new Seismic lines/Cleared lines will be added.

At 1:100000 Seismic Lines/Cleared Lines shown on the latest previous edition map and its related 'parent' 250K maps will be shown, unless there Is clear evidence they no longer exist. No new Seismic lines/Cleared lines will be added.

GEODATA

Map

Seismic lines/Cleared lines will be labelled, for example ‘seismic line’, ‘cleared line’.

Seismic lines/Cleared lines will be masked where black type unavoidably overprints the feature. The break measurement will be 0.2 mm on either side of the type where it crosses the feature. (Note: the feature will be masked only on the map and will be complete in the data.)

Data rules

Seismic lines/Cleared lines cannot overlap; Sea, Lakes, Reservoirs, Watercourse areas or Canal areas.

Related features

Related chapters

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

SETTLING PONDS

Shallow beds, usually segmented by constructed walls, for the treatment of sewage or other wastes, or used for aquaculture.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		62500	390625

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	sew_pond	
Coverage (see Section 3 chapter 4)	w	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>5

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable;
23

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

Levee banks less than 5 mm in length at map scale will not be shown within Settling ponds.

Adjacent ponds will be shown as one polygon, separated by Settling pond internal lines.

GEODATA

Map

Settling ponds are to have an accompanying descriptive note eg 'settling ponds', ‘tailings pond’ unless the words ‘settling pond’ or ‘tailings pond’ are included in the name.

Data rules

Settling ponds will be bounded by a Waterline feature. Settling ponds cannot overlap; Other waterbody coverage polygons, Aeronautical coverage areas, Sea, Vegetation coverage polygons (except voids).

Related features

Mine, Open cut/mining area, Settling pond internal line, Tile edge and Waterline

Related chapters

Section 1 chapters 3.8.3

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

SETTLING POND INTERNAL LINE

Levee banks within settling ponds.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
5 mm			

Scales

1:250 000
&
1:100 000

Feature Usage

Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	sew_pond_i_l	
Coverage (see Section 3 chapter 4)	5	

Data Attributes

GEODATA and working database

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable; 114

General Notes

Levee banks less than 5 mm in length at map scale will not be shown within Settling ponds.

GEODATA

Map

Data rules

Must be entirely within a Settling pond polygon.

Related features

Settling ponds

Related chapters

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

SPILLWAY

A channel or duct formed around the side of a reservoir past the end of the dam, to convey flood discharge from the watercourse above the reservoir into the watercourse below the dam.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
1 mm			

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	spillway	
Coverage (see Section 3 chapter 4)	d	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] Name of associated watercourse

PERENNIALITY (perennial) [integer; 1,1,I] Code for perenniality;
0 - Not Applicable
1 - Perennial
2 - Non-perennial

HIERARCHY (hierarchy) [integer; 1,1,I] Importance of associated watercourse
0 - Not Applicable
1 - Major
2 - Minor

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
926

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

A Spillway feature will represent the spillway chute and any associated stilling basins. Where water overtops the dam wall a spillway will not be shown e.g. Hume Dam or Scrivener Dam. (see Dam)

The spillway will carry the Name, Hierarchy and Perenniality attributes of the watercourse to which it relates.

GEODATA

Map

Data rules

Spillways must be adjacent to a Reservoir.

Spillways can not overlap;
Built-up areas, Sea, Reservoirs, Lakes, Canal areas or Watercourse areas.

Spillways start on the node of connectors across reservoirs and end on the node of a connector or watercourse below a dam wall.

Related features

Connector, Dam and Reservoir

Related chapters

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

SPOT ELEVATION

A point on the earth's surface, of known elevation, above or below the Australian Height Datum (AHD66)

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Point	
Planimetric Accuracy	100 / 40	
Feature code	spot_elevatn	
Coverage (see Section 3 chapter 4)	e	

Data Attributes

GEODATA and working database

ELEVATION (elevation) [number; 7,7,N,2] Elevation in metres from the Australian Height Datum

SOURCE (source) [integer;1,1,I] Code for the source of the Spot elevation;
1 - Printed Map
2 - Compilation material
3 - Digital Topographic Data

POINT DETERMINATION (point) [integer; 1,1,I] Code for the type of Spot elevation
1 - Spot elevation
2 - Spot elevation inside depression contour
3 - Spot elevation on sand ridge
4 - Spot elevation captured from contour (to be used only at 1:100 000. For 1:250 000 permission is required from Geoscience Australia see section 3 chapter 6.6.1 Spot Elevations)

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>7

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
52
0 (see Section 3 chapter 6.6)

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology;
0

ORIENTATION (orientation) [binary; 4,5,B] Currently not used by symbology; 0

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features (see Section 3 chapter 5.15).

General Notes

Spot elevations will be selected to best show terrain shape, change of slope and high and low points.
In any group of related features (ridges, peaks, saddles), the highest elevation shall be shown. See Section 3 chapter 6.6.1

The highest spot elevation on the map including the bleed edges shall be shown.

GEODATA

The highest spot elevation within the tile will be shown. See Section 3 chapter 6.6 for treatment of Spot elevations in close proximity to Locality mountains and Horizontal control points and chapter 6.6.1 for selection rules for Spot elevations.

Map

Spot elevations will be labelled with their elevation (See Section 2 chapter 5.12)

Data rules

Contours and Auxiliary Contours must fit logically with Spot elevations.

Spot elevations cannot overlap Lakes, Reservoirs, Watercourse areas, Canal areas, Sea, Building area.

Related features

Benchmark, Horizontal control point, Landmark point, Locality (mountain), Pinnacle and Reef

Related chapters

Section 1 chapter 3.6.5
Section 3 chapters 5.11.1 and 6.6

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

SPRING

A place where water issues from the ground naturally.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Point	
Planimetric Accuracy	100 / 40	
Feature code	spring	
Coverage (see Section 3 chapter 4)	x	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The Spring's name - for 100K use only

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

NAME (name) [character; 50,50,C] The Spring's name - for 250K use only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
73

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology; 0

ORIENTATION (orientation) [binary; 4,5,B] Currently not used by symbology; 0

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

This feature will not be shown in densely settled regions as defined by Appendix C 'Fence and Water Facilities Guide' regardless of whether it was shown on/in the base material/digital data. Refer to Appendix C for more information on when to capture this feature.

At 1:100 000 in sparsely and moderately settled regions as defined by Appendix C 'Fence and Water Facilities Guide', size and any other selection criteria apply to all feature occurrences.

At 1:250 000 in sparsely and moderately settled regions as defined by Appendix C 'Fence and Water Facilities Guide', size and any other selection criteria apply to new feature occurrences. All

feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

GEODATA

Map

Data rules

Springs cannot overlap Perennial Lakes, Reservoirs, Watercourse areas, Canal areas or Sea.

Related features

Bore and Waterpoint

Related chapters

Appendix C

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

STATE BORDER

The boundary defining the division of the Commonwealth of Australia into State/Territory administrations.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	state_border	
Coverage (see Section 3 chapter 4)	f	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>1

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable;
80
0 non-printing

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features (see Section 3 chapter 5.15).

General Notes

State Borders which do not follow physical features will be imported from the Geoscience Australia GEODATA 100K Coast Product. State borders which follow physical features will be coincident with those features.

Where a state border coincides with a lock symbol it is logical that the border symbol should be broken and the lock symbol shown. In such circumstances, the state border symbol may be symbolised to symbol number ‘0’ non-printing value.

GEODATA

Map

State borders will be labelled with State names (See Section 2, 4.6) State borders will be masked where black type unavoidably overprints the feature. The break measurement will be 0.2 mm on either side of the type where it crosses the feature. (Note: the feature will be masked only on the map and will be complete in the data.)

Data rules

State borders will bound mainland polygons. State borders cannot overlap Sea.

Related features

Boundary - International and Mainland

Related chapters

Section 3 chapters 3.2.4, 5.11.2 and 6.8

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

STOCK GRID

A grid at the opening in a fence to prevent livestock crossing but allowing for the free passage of vehicles.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Point	
Planimetric Accuracy	100 / 40	
Feature code	grid	
Coverage (see Section 3 chapter 4)	v	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
25

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology;
0

ORIENTATION (orientation) [binary; 4,5,B] Orientation in whole degrees from East going anti-clockwise; 0 - 360

General Notes

At 1:100 000 this feature will only be shown in sparsely settled regions as defined by Appendix C 'Fence and Water Facilities Guide' except for Stock grids on Vermin Proof fences which will be shown in all areas.

At 1:250 000 this feature will only be shown in sparsely settled regions as defined by Appendix C 'Fence and Water Facilities Guide', regardless of whether it previously existed in the base Series 2 data, except for Stock grids on Vermin Proof fences which will be shown in all areas.

Stock grids will not be shown on vehicle tracks with the exception of Stock grids in Vermin or Dog Proof fences which will be shown in all areas.

GEODATA

Map

The underlying fence symbol will be masked out for the stock grid symbol.

Data rules

Stock grids must be coincident with a node on the road feature, and must fall exactly on the fence. If necessary a vertice should be added to ensure the fence, road and stock grid are coincident with each other. Stock grids cannot overlap Lakes, Reservoirs, Watercourse areas, Canal areas, Building areas or Sea.

Related features

Fence, Gate and Road

Related chapters

Section 3 chapters 5.9 and 5.11.2 Appendix C

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

STORAGE TANK

Large vessel for the storage of liquids (not water) or gases, usually associated with refineries or chemical plants.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Point	
Planimetric Accuracy	100 / 40	
Feature code	stor_tank_p	
Coverage (see Section 3 chapter 4)	u	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
801

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology;
0

ORIENTATION (orientation) [binary; 4,5,B] Currently not used by symbology; 0

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

Storage tanks will be shown when the features are sufficiently prominent to serve as landmarks.

This feature will be used to represent the location of an individual storage tank as well as groups of tanks. A group of tanks that cannot be shown individually may also be shown by a representative pattern.

GEODATA

Map

Storage tanks are to have an accompanying descriptive note eg 'storage tanks', ‘oil tanks’ unless a description is included in the name.

Data rules

Related features

Landmark point and Water tank

Related chapters

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

SWAMP

Land which is so saturated with water that it is not suitable for agricultural or pastoral use and presents a barrier to free passage.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		250000	1562500

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	swamp	
Coverage (see Section 3 chapter 4)	w	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The Swamp's name

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>5

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
908

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features (see Section 3 chapter 5.15).

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

Polygons that are smaller than the minimum size for inclusion and are in groups may be aggregated into one large representative polygon where the small areas of swamp are less than 0.5mm apart at map scale.

GEODATA

Map

Watercourses entering swampy areas will be shown only to the limits of the eroded channels.

No direction of flow arrow will be added when a watercourse symbol stops in a swamp. (see Watercourse)

Swamps having distinctive vegetation will be labelled appropriately e.g. lignum, marsh, wetlands, cane grass unless a description is included in the name

Data rules

Swamps will be bounded by Waterlines and may be bounded by Junction features. (See Section 1 3.8.4)

Swamps cannot overlap;
Other waterbody coverage polygons or Sea.

Related features

Connector, Junction, Marine swamp, Tile edge and Waterline

Related chapters

Section 1 chapters 3.8.3, 3.8.4 and 3.8.9
Section 3 chapter 6.9.2

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

TAXIWAY

A route for the movement of Aircraft and vehicles which service them.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	- / 40	
Feature code	taxiway	
Coverage (see Section 3 chapter 4)	a	

Data Attributes

GEODATA and working database
DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>1

Working database only
SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable;
709

General Notes

Sufficient taxiways will be shown to reflect the movement pattern. Select the major through routes within the area whilst avoiding clutter. Where all taxiways can be shown without causing clutter then they shall be shown.

The end nodes of taxiways shall be coincident with a vertex on the perimeter of the Aircraft Facility Area polygon or with a building representing its destination point.

GEODATA

Map

Data rules

Taxiways must fall wholly within Airport features.

Related features

Aircraft facility, Airport, Aircraft Facility Line

Related chapters

Section 1 chapter 3.8.10

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

TILE EDGE

The line defining the limits of the GEODATA and working database extents.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	1 / 1	
Feature code	tile_edge	
Coverage (see Section 3 chapter 4)	b, c, f, i, o, q, t, w, z, 1 and 3	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>9

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
0

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features (see Section 3 chapter 5.15).
For framework cover only.

General Notes

Tile edge features will be used to show the extent of both the working database and GEODATA tile. For the extents of Working data and GEODATA see appendices G and H.

GEODATA

Map

Data rules

Tile edge features will bound all polygon features which touch the tile edge in either the working database or the GEODATA tile database.

Sections of tile edge in layers other than the Framework layer will be coincident with the Tile edge in the Framework layer.

Related features

Aircraft facility, Aircraft facility void, Airport, Building, Built-up area, Built-up area void, Canal, Cemetery, Crater, Distorted surface, Foreshore flat, Woody vegetation, Hypsometric area, Island, Kilometric distance indicator, Lake, Land subject to inundation, Mainland, Mangrove, Mangrove flat, Map mask, Marine swamp, Offshore void, Open Cut/mining area, Orchard or vineyard, Park, Plantation, Prohibited area, Prohibited area void, Rainforest, Rapid, Reef, Relief area void, Reserve - Indigenous area, Reserve - Forestry, Reserve - Nature conservation, Reserve - Water supply, Reserve void, Reservoir, Rocky outcrop, Rubbish tip, Saline coastal flat, Salt evaporator, Sand, Sand dunes, Sea, Settling ponds, Swamp, Vegetation Void, Water body void and Watercourse

Related chapters

Section 1 chapters 3.2, 3.7 and 3.8.1
Section 3 chapters 5.11.2 and 5.12
Appendix H

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

TRANSITION POINT

The point where a road or railway enters a tunnel.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

Map

Spatial object

Representation	Point	
Planimetric Accuracy	100 / 40	
Feature code	transition_p	
Coverage (see Section 3 chapter 4)	5	

Data Attributes

GEODATA and working database

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
290

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology;
0

ORIENTATION (orientation) [binary; 4,5,B] Orientation in whole degrees from East going anti-clockwise; 0 - 360

General Notes

See Railway tunnel and Road tunnel.

GEODATA

Map

Data rules

Transition points only appear on linear tunnels and not on point tunnels.

Transition points cannot overlap Lakes, Reservoirs, Watercourse areas, Canal areas or Sea.

Transition points must be coincident with a node on the railway or road to which they relate.

Related features

Railway, Railway tunnel, Road, Road tunnel

Related chapters

Section 3 chapters 5.9 and 5.11.2

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

TROPIC OF CAPRICORN

The parallel of latitude 23°26.5'S.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

Map

Spatial object

Representation	Chain	
Planimetric Accuracy	1 / 1	
Feature code	tropic_cap	
Coverage (see Section 3 chapter 4)	5	

Data Attributes

GEODATA and working database

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
66

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map; TROPIC OF CAPRICORN

General Notes

GEODATA

Map

The Tropic of Capricorn will be labelled 'Tropic of Capricorn' close to the east and west edges of any map on which it occurs.
The Tropic of Capricorn will be masked where black type unavoidably overprints the feature. The break measurement will be 0.2 mm on either side of the type where it crosses the feature. (Note: the feature will be masked only on the map and will be complete in the data.)

Data rules

Related features

Related chapters

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

VEGETATION LINE

A line depicting the boundary of a vegetation polygon.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	veg_l	
Coverage (see Section 3 chapter 4)	t	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>1

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
0

General Notes

GEODATA

Map

Data rules

Vegetation lines will bound Woody vegetation, Mangrove, Orchard or vineyard, Plantation, Rainforest and Vegetation void polygons.

Vegetation lines must be coincident with the following features if they fall within 50m at 1:250 000 and 20m at 1:100 000 or if the area created between the boundaries of these features and the vegetation line is less than 62 500 sq m at 1:250 000 and 10 000 sq m at 1:100 000:

Built-up area lines
Building lines
Cultural Area Lines
Offshore lines
Relief area lines where they surround open cut, sand & dunes.
Waterlines where they bound Reservoirs, Settling ponds, Salt evaporators, Sea, Lakes and Perennial Watercourse areas.
Sea wall.
Aircraft facility lines.

Related features

Aircraft facility line, Built-up area line, Building line, Woody vegetation, Mangrove, Offshore line, Orchard or vineyard, Plantation, Rainforest, Relief area line, Sea Wall, Vegetation void and Waterline

Related chapters

Section 2 chapter 2.2.3
Section 3 chapter 5.11.2

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

VEGETATION VOID

An area of land with less than 10% foliage cover of trees or scrub.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		40 000	250 000

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	veg_void	
Coverage (see Section 3 chapter 4)	t	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>2
UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
0

General Notes

The feature will be used for cleared areas within Woody vegetation, Mangrove, Orchard or vineyard, Plantation and Rainforest polygons. When used for this purpose the minimum size will be 250 000 square metres at 1:250 000 scale and 40 000 square metres for 1:100 000 scale.

This feature will also complete voids in vegetation left by Lakes, Perennial watercourses, Built-up areas, Open cut mines, Runways, Dunes, Aircraft facilities, Airport areas, Reservoirs, Canal areas, Sewage ponds, Salt evaporators, salt pans, claypans and other features which have low tree or shrub coverage. When used for this purpose the minimum size will be that of the feature that creates the void. For example 62 500 sq m at 1:250 000 and 10 000 sq m at 1:100 000 if the void is created by a new lake.

GEODATA

Map

Data rules

Vegetation voids will be bounded by a Vegetation line. Vegetation voids cannot overlap; Other vegetation coverage polygons or Sea.

Related features

Tile edge and Vegetation line

Related chapters

Section 1 chapter 3.8.2

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

WATER BODY VOID

A void in a water body polygon.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		10000	62500

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	w_body_void	
Coverage (see Section 3 chapter 4)	w	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>5

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
0

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features (see Section 3 chapter 5.15).

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

This feature will be used for islands in the mainland.

GEODATA

Map

Data rules

Water body voids will be bounded by a Waterline feature. Water body voids can not overlap other water body area coverage polygons or Sea.

Related features

Locality, Tile edge and Waterline

Related chapters

Section 1 chapters 3.8.2 and 3.8.5 Section 3 chapter 6.3

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

WATER TANK

A feature constructed on or below the ground for the storage of water.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Point	
Planimetric Accuracy	100 / 40	
Feature code	tank_dam_p	
Coverage (see Section 3 chapter 4)	x	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The Water tank's name – for 100K use only.

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

NAME (name) [character; 50,50,C] The Water tank's name –for 250K use only.

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
86
0 – Non-printing in close proximity to a populated place.

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology;
0

ORIENTATION (orientation) [binary; 4,5,B] Currently not used by symbology; 0

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

This feature will not be shown in densely settled regions as defined by Appendix C 'Fence and Water Facilities Guide' regardless of whether it was shown on/in the base material/digital data. Refer to Appendix C for more information on when to capture this feature.

At 1:100 000 in sparsely and moderately settled regions as defined by Appendix C 'Fence and Water Facilities Guide', size and any other selection criteria apply to all feature occurrences.

At 1:250 000 in sparsely and moderately settled regions as defined by Appendix C 'Fence and Water Facilities Guide', size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

Water tanks larger than 140625 sq. m at 1:250 000 or 22500 sq. m at 1:100 000. will be shown as a Reservoir feature.

This feature may represent a group of tanks.

Where a Water tank and Windpump are situated together, only the Windpump, which has the greater landmark value, will be shown. (Refer feature Windpump).

GEODATA

Map

Names will be shown in sparsely settled areas.

As the density of the cultural detail increases, names will be progressively omitted.

Water Tanks to have an accompanying descriptive note e.g.: aquarium for features not being used directly for human or livestock consumption.

Where a bore and a water tank are situated together, both will be included in the data but only the water tank will be shown as it usually has the greater landmark value. Bore should be symbolised to 0 (non - printing).

Water Tanks plotted within 2.5 mm at map scale of a populated place will be symbolised to 0 (non-printing).

Data rules

Water tanks can not overlap Reservoirs, Building area, Watercourse areas, Canal areas or Sea.

Related features

Bore, Dam, Landmark point, Reservoir, Storage tank, Waterpoint and Windpump

Related chapters

Appendix C

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

WATERCOURSE

A natural channel along which water may flow from time to time.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
10 mm		100000	625000

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	Polygon
Planimetric Accuracy	100 / 40	9999 / 9999
Feature code	watercours_l	watercours_a
Coverage (see Section 3 chapter 4)	d	w

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The Watercourse name

PERENNIALITY (perennial) [integer; 1,1,I] Code for perenniality;
1 - Perennial
2 - Non-perennial

HIERARCHY (hierarchy) [integer; 1,1,I] Importance of associated watercourse
1 - Major
2 - Minor

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4 - feat_code “watercours_l”
<tile-id>5 - feat_code “watercours_a”

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol numbers applicable:
Lines (250K only) :
92 - Major
940 - Minor
942 - Minor with direction of flow
922 - Major with direction of flow

Lines (100K only) :
91 – Major Non Perennial
92 - Major Perennial
940 – Minor Perennial
944 – Minor Non Perennial

Polygons (250K & 100K);
10 - Perennial
11 - Non perennial
0 - Containing linear braided watercourses.

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features (see Section 3 chapter 5.15).

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

Watercourses shown as double line streams on the latest previous edition map or compilation material at the comparable scale will be shown as polygons. Other watercourses will be shown as polygons where they are wider than 1 mm at scale and meet the area criteria.

The perenniality and hierarchy of Watercourses will be classified according to Appendix D - Inland water features guide where the watercourse is shown on the guide. Perenniality of watercourses not on the guide will be non-perennial unless there is strong evidence to the contrary. Watercourse not shown on the guide will be classified as minor-non perennial except for tidal watercourses in mangrove. Once a watercourse enters or bounds a mangrove, that watercourse will become perennial and then remains perennial from that point to the coastline.

A watercourse may be classified on the guide as perennial but shown as an area with one or more channels running down its length. The channels will be coded as perennial watercourse lines and the watercourse areas will be coded as non-perennial watercourse areas. In this situation a channel may at times be in close proximity to or coincident with the waterline that defines the edge of the watercourse area. Both the linear and area instances will be coded as major. See GEODATA notes for the handling of braided streams.

Braided streams fall into two categories; those that flow within clearly defined primary banks and those that don't. There is slightly different handling of each category. Section 3 chapter 6.9.4 shows the handling of braided streams lying in primary banks

GEODATA

For braided streams within clearly defined primary banks all channels will carry the name and perenniality of the Watercourse. All channels will have a planimetric accuracy of 9999. For Watercourses with hierarchy major the channel(s) identified in Appendix D will be coded as major. Remaining channels will have a hierarchy of minor. The area between the primary banks will be shown as a watercourse area.

For braided streams not in clearly defined banks, at least one channel will carry the name and perenniality of the watercourse. Other channels that form part of the watercourse should carry the name and perenniality. However, if it is unclear whether the channel is part of the named watercourse it should be left unnamed and follow the rules for watercourses not shown on Appendix D. For Watercourses with hierarchy major a contiguous channel will be coded as major. Where possible this channel will be an identifiable main channel. Where there is no identifiable main channel a channel will be selected which follows the general course of the stream and, where possible, links waterholes. Remaining channels will have a hierarchy of minor

Map

At 1:250 000 symbols 922 and 942 will be used for the last chain of watercourses which dissipate and where the direction of flow may be unclear. The end node must be at the downstream end of the feature.No direction of flow arrow will be added when a watercourse symbol stops in a swamp, or where direction of flow can be reasonably determined from the interpretation of topography at 1:250 000.

The perenniality of single line watercourses will not appear on the map. The hierarchy of double line Watercourses will not be shown.

There is no polygon infill associated with a braided watercourse. Braided streams with a hierarchy of major will have only the channel coded as major shown with symbol 92 (major watercourse).

Data rules

Watercourses will have nodes at all intersections.

Watercourse lines cannot overlap Lake perennial, Reservoirs, Perennial Watercourse areas and Canal areas.

Perennial watercourse polygons cannot overlap Sea, Built-up areas, other waterbody coverage areas or vegetation coverage polygons (except voids).

Non-perennial watercourse polygons cannot overlap Sea, Built-up areas, other waterbody coverage areas or vegetation coverage polygons (except voids, Woody vegetation and Rainforest).

Watercourse polygons will be bounded by waterline features and may be bounded by Junction and Rapid area line features.

Related features

Canal, Connector,Flow Direction Arrow, Ford, Junction, Lake, Locality (gorge), Lock, Mangrove, Prohibited area line, Rapid, Rapid area line, Reserve line, Reservoir, Tile edge, Waterfall, Waterhole and Waterline

Related chapters

Section 1 chapters 3.8.3, 3.8.4, 3.8.8 and 3.9.1
Section 2 chapters 2.2.3 and 5.16
Section 3 chapters 5.7, 5.11.2, 6.9.1, 6.9.4 and 6.10

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

WATERFALL

A sudden descent of water over a step or ledge in the bed of a watercourse.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Point	
Planimetric Accuracy	100 / 40	
Feature code	fall_p	
Coverage (see Section 3 chapter 4)	d	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The Waterfall's name

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol numbers applicable:
89 - printing
0 - where coincident with a cliff symbol

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Width of symbol in millimetres; minimum feature width is 1.

ORIENTATION (orientation) [binary; 4,5,B] Orientation in whole degrees from East going anti-clockwise; 0 - 360

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

GEODATA

Map

Waterfalls will be symbolised except where the waterfall is associated with a symbolised cliff, in which case the Waterfall symbol will not be shown.

Whether or not they are symbolised Waterfalls are to have an accompanying descriptive note 'falls' or ‘numerous falls’ unless the word ‘falls’ or ‘waterfall’ is included in the name.

Data rules

Waterfalls must be coincident with a node on a watercourse chain or fall within a watercourse area.

Waterfalls cannot overlap;
Sea, Lakes, Canal areas or Reservoirs.

Related features

Cliff and Watercourse

Related chapters

Section 3 chapters 5.8, 5.9 and 5.11.2

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

WATERHOLE

A natural depression which holds water, within a non-perennial watercourse or a non-perennial lake.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Point	
Planimetric Accuracy	100 / 40	
Feature code	waterhole	
Coverage (see Section 3 chapter 4)	d	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The Waterhole's name

PERENNIALITY (perennial) [integer; 1,1,I] Code for perenniality;
1 - Perennial

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
81

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology;
0

ORIENTATION (orientation) [binary; 4,5,B] Currently not used by symbology; 0

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

This feature will be shown when it does not exceed 62500 sq m for 1:250 000 or 10000 sq m for 1:100 000. Features larger than these dimensions will be shown as lakes. (see Lakes and Waterpoints)

All waterholes will be classified as perennial.

Indigenous sacred sites will not be named as sacred sites on the map even if named on a previous edition map, but the feature may be a lake, pool or waterhole in which case the appropriate map symbol and hydrological name will be used.

GEODATA

Map

Waterholes which are distinctive may have an accompanying descriptive note e.g: 'salt', 'billabong' unless the words 'salt','billabong' etc are included in the name.

Data rules

Waterholes must be coincident with a node on a Watercourse chain or fall within a Watercourse polygon.

Waterholes cannot overlap;
Sea, perennial Lakes or Reservoirs.

Related features

Connector, Lake, Watercourse and Waterpoint,

Related chapters

Section 3 chapters 5.11.2 and 6.9.4

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

WATERLINE

A line depicting the boundary of a hydrographic area feature.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	waterline	
Coverage (see Section 3 chapter 4)	f	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>1 - in Framework layer
<tile-id>1 - in Waterbody layer, delimiting “lake” or “reservoir”
<tile-id>4 - in Waterbody layer, not delimiting “lake” or “reservoir”

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol numbers applicable:
Note: The Waterline feature can bound various polygon types & will have its symbol number changed accordingly. The symbol numbers shown apply to Waterlines bounding the following features.

Line symbol ;	*Polygon area bounded;*
94	*Definite boundary on Lake, watercourse area, canal area, coastline*
0	*Coastline under cliff (non printing line)*
0	*Subject to inundation (non printing line)*
0	*Mangrove flat (non printing line)*
94	*Reservoir*
0	*Saline coastal flat (non printing line)*
0	*Swamp (non printing line)*
0	*Marine swamp (non printing line)*

114 Salt evaporator
114 Settling pond

OLD UNIQUE FEATURE IDENTIFIER (old_ufi) [character; 10,10,C] UFI used for this feature in GEODATA TOPO-250K Series 1.x. Null for new features (see Section 3 chapter 5.15).

General Notes

When bounding sea and estuarine areas, the line is indicative of the position of mean high water. The exception is in Mangroves, where the line is indicative of the position of the seaward side of the mangroves.

The shoreline of lakes will be the line washed by the water when the feature is filled.

The shoreline of reservoirs formed by water impounded by dams or weirs will be shown at the top water level.

This feature is also used to depict the banks of a double line watercourse.

GEODATA

Map

Data rules

Waterlines will bound Canal, Island, Lake, Land subject to inundation, Mainland, Mangrove Flat, Marine swamp, Reservoir, Saline Coastal Flat, Salt evaporator, Sea, Settling pond, Swamp, Waterbody void and Watercourse polygons.

Waterlines bounding saline coastal flats and mangrove flats will be coincident with the waterline in the framework layer where the saline costal flat or mangrove abuts the sea.

Related features

Built-up area line, Canal, Cliff, Contour, Island, Lake, Land subject to inundation, Mainland, Mangrove flat, Marine swamp, Offshore line, Prohibited area line, Rapid, Reserve line, Reservoir, Saline coastal flat, Salt evaporator, Sea, Settling ponds, Swamp, Vegetation line, Water body void and Watercourse

Related chapters

Section 1 chapter 3.9
Section 2 chapter 2.2.3
Section 3 chapters 5.11.1, 5.11.2, 6.9.3 and 6.9.4

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

WATERPOINT

An isolated natural depression which holds water, not within Watercourses.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Point	
Planimetric Accuracy	100 / 40	
Feature code	waterpoint	
Coverage (see Section 3 chapter 4)	x	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The Waterpoint's name – for 100K use only

WATERPOINT CODE (waterpoint) [integer; 1,1,I] Code for the type of Waterpoint;
1 - Native well
2 - Gnamma hole
3 - Soak
4 - Rockhole
5 - Pool

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

NAME (name) [character; 50,50,C] The Waterpoint's name –for 250K use only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
82

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology;
0

ORIENTATION (orientation) [binary; 4,5,B] Currently not used by symbology; 0

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

This feature will not be shown in densely settled regions as defined by Appendix C 'Fence and Water Facilities Guide' regardless of whether it was shown on/in the base material/digital data. Refer to Appendix C for more information on when to capture this feature.

At 1:100 000 in sparsely and moderately settled regions as defined by Appendix C 'Fence and Water Facilities Guide', size and any other selection criteria apply to all feature occurrences.

At 1:250 000 in sparsely and moderately settled regions as defined by Appendix C 'Fence and Water Facilities Guide', size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

This feature will be shown when it does not exceed 62500 sq m for 1:250 000 or 10000 sq m for 1:100 000. Features larger than these dimensions will be shown as lakes. (see Lakes and Waterholes)

Indigenous sacred sites will not be named as sacred sites on the map even if named on a previous edition map, but the feature may be a lake, pool or waterhole in which case the appropriate map symbol and hydrological name will be used.

GEODATA

Map

Waterpoints are to have an accompanying descriptive note eg 'pool', 'soak' unless the words 'pool' or 'soak' etc are included in the name.

Data rules

Waterpoints can not overlap Sea, Watercourse line, Watercourse area, Lakes, Canal areas, Reservoirs or Building areas.

Related features

Lake, Spring, Water Tank and Waterhole

Related chapters

Appendix C

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

WHARF

A structure built from the land parallel to shore to provide for the berthing of vessels.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
1 mm			

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	wharf	
Coverage (see Section 3 chapter 4)	h	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
752

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

See also Jetty

GEODATA

Map

Data rules

Wharves coincident with coastlines will be cloned to the Framework coverage as sea walls.

Related features

Breakwater, Jetty and Sea wall

Related chapters

Section 3 chapters 3.2.4 and 5.11.1

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

WINDBREAK

A narrow strip of natural or planted trees, or scrub, positioned so as to break the force of the prevailing wind.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
5 mm			

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Chain	
Planimetric Accuracy	100 / 40	
Feature code	windbreak	
Coverage (see Section 3 chapter 4)	j	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
87

General Notes

At 1:250 000 Windbreaks shown on base Series 2 data will be retained, unless there Is clear evidence they no longer exist. No new Windbreaks will be added.

At 1:100 000 Windbreaks shown on the latest previous edition map and its related 'parent' 250K maps will be shown, unless there is clear evidence they no longer exist. Windbreaks will be added when they can be confirmed on imagery and on additional approved revision source material.

No distinction will be made between different types of trees. This feature does not include uncleared portions of road reserves or fauna protection corridors regardless of whether or not that feature is represented on the previous edition map or in the data.

GEODATA

Map

Data rules

Windbreaks cannot overlap; Sea, Watercourse areas, Lakes, Canal areas, Reservoirs, Building areas, Sand areas, Open Cut areas or Sand dune areas.

Related features

Woody vegetation

Related chapters

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

WINDPUMP

A tower fitted with a wind-driven pump.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Point	
Planimetric Accuracy	100 / 40	
Feature code	windpump	
Coverage (see Section 3 chapter 4)	x	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The Windpump's name – for 100K use only

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

NAME *(name) [character; 50,50,C] The Windpump's name – for 250K use only*

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
434

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology;
0

ORIENTATION (orientation) [binary; 4,5,B] Currently not used by symbology;
0

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

This feature will not be shown in densely settled regions as defined by Appendix C 'Fence and Water Facilities Guide' regardless of whether it was shown on/in the base material/digital data. Refer to Appendix C for more information on when to capture this feature.

At 1:100 000 in sparsely and moderately settled regions as defined by Appendix C 'Fence and Water Facilities Guide', size and any other selection criteria apply to all feature occurrences.

At 1:250 000 in sparsely and moderately settled regions as defined by Appendix C 'Fence and Water Facilities Guide', size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

Windpumps will be shown when the features are sufficiently prominent to serve as landmarks.

This feature will be used to represent the location of an individual windpump as well as groups of windpumps. A group of windpumps that cannot be shown individually may also be shown by a representative pattern.

GEODATA

Map

Windpumps will be named where named on the latest previous edition map.

Data rules

Windpumps cannot overlap Sea, perennial Watercourse areas, Lakes perennial, Canal areas, Reservoirs or Building areas.

Related features

Bore and Water tank

Related chapters

Appendix C

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

WOODY VEGETATION

An area of land with woody vegetation greater than 10% foliage cover (includes trees and shrubs).

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K
		40000	250000

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Polygon	
Planimetric Accuracy	9999 / 9999	
Feature code	forest	
Coverage (see Section 3 chapter 4)	t	

Data Attributes

GEODATA and working database

COVER DENSITY (coverdensity) [integer; 1,1,I] Density of foliage coverage;
1 - Sparse (Foliage coverage of 10–30%)
2 – Dense (Foliage coverage of 30-70%)
3 – Closed (Foliage coverage of 70%+)

GROWTH FORM (growthform) [integer; 1,1,I] The Majority Growth Form Type;
1 - Tree
2 – Tree Mallee
3 – Shrub
4 – Mallee Shrub
5 – Heath Shrub
6 – Chenopod Shrub
7 – Other (unknown)

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>2

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:

Polygons (250K only)
2

Polygons (100K only)
201 – Sparse
200 – Dense
2 – Closed

General Notes

This classification excludes mangroves, orchards, plantations and rainforest.

Size criteria will not apply where Woody vegetation completely covers small islands, i.e. such islands will have a matching Woody vegetation polygon.

GEODATA

Woody vegetation can overlap Built-up area.

Map

Woody vegetation will be masked for Built-up areas on the map

Data rules

Woody vegetation is bounded by a Vegetation line feature.

Woody vegetation cannot overlap;
Open Cut, Building area, Sand, Sand dunes, Aircraft facility polygons, Airport area, Canal area, Reservoirs, Rocky Outcrop, Settling ponds, Salt evaporators, Lake perennial, Watercourse area perennial, Mangrove Flat and Sea.

Related features

Mangrove, Orchard or vineyard, Plantation, Rainforest, Sand, Tile edge, Vegetation line and Windbreak

Related chapters

Section 3 chapter 6.2

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

WRECK

A disabled vessel, either submerged or visible, which is attached to, or foul of, the bottom or cast up on the shore.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Point	
Planimetric Accuracy	100 / 40	
Feature code	wreck	
Coverage (see Section 3 chapter 4)	n	

Data Attributes

GEODATA and working database

NAME (name) [character; 50,50,C] The Wreck's name

RELATIONSHIP (relationship) [Integer; 1,1,I] Code for relationship to sea level;
4 - Bare
5 - Tidal
6 - Submerged

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable;
756 – Bare or Tidal
759 - Submerged

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology;
0

ORIENTATION (orientation) [binary; 4,5,B] Currently not used by symbology; 0

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 size and any other selection criteria apply to all feature occurrences.

At 1:250 000 size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data will be retained unless there is clear evidence they no longer exist.

All wrecks visible above water level and all those submerged wrecks which constitute a danger to shipping will be shown.

GEODATA

Map

Wrecks may be named and the date the vessel went aground may be included when it is of historical or general interest.

Data rules

Wrecks cannot overlap Building areas.

Related features

Related chapters

Section 2 Chapter 8.1, 9.1, 10
Section 3 chapter 3.2.4

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

YARD

A small area of land enclosed by a fence and generally used for confining stock.

Minimum Size for Inclusion

Dimensions		Area (sq m)	
Length	Height	100K	250K

Scales

1:250 000
&
1:100 000

Feature Usage

GEODATA & Map

Spatial object

Representation	Point	
Planimetric Accuracy	100 / 40	
Feature code	yard	
Coverage (see Section 3 chapter 4)	u	

Data Attributes

GEODATA and working database

DATA QUALITY POINTER (q_info) [character; 8,8,C] Pointer to attribute and feature reliability (see Section 1 chapter 3.5 and Section 3 chapter 5.14);
<tile-id>4

UNIQUE FEATURE IDENTIFIER (ufi) [character; 10,10,C] Alphanumeric feature identifier (see Section 1 chapter 3.4 and Section 3 chapter 5.14)

Working database only

SYMBOL (symbol) [binary; 4,5,B]
Symbol number applicable:
433
0 – non-printing in close proximity to a bore or homestead

FEATURE WIDTH (feat_wid) [Floating point; 8,10,F,4] Currently not used by symbology;
0

ORIENTATION (orientation) [binary; 4,5,B] Currently not used by symbology; 0

TEXT NOTE (text_note) [character; 30,30,C] Descriptive note to appear on map

General Notes

At 1:100 000 this feature will only be shown in sparsely settled regions as defined by Appendix C 'Fence and Water Facilities Guide', size and any other selection criteria apply to all feature occurrences.

At 1:250 000 this feature will only be shown in sparsely settled regions as defined by Appendix C 'Fence and Water Facilities Guide', regardless of whether it previously existed in the base Series 2 data. Size and any other selection criteria apply to new feature occurrences. All feature occurrences existing in the base Series 2 data in sparsely settled regions will be retained unless there is clear evidence they no longer exist.

Features greater than 390625 sq m for 1:250 000 scale and 62500 for 1:100 000 will be depicted using the feature Fence (see Fence).

GEODATA

Map

Yards that are within 2mm at map scale of a bore or homestead will be symbolised to 0 (non-printing)

Data rules

Yards cannot overlap Sea, Watercourse area perennial, Lakes perennial, Canal areas, Reservoirs or Building areas.

Related features

Fence

Related chapters

Appendix C

Note: See disclaimer in Appendix A chapter 1.1 regarding **Related features** and **Related chapters**

5. Secondary Table Dictionary

5.1 Data Quality Table

The Data Quality Table is a secondary table which holds data quality information about each feature instance in the data set. Each tile has one DQT, which has six fields.

COLUMNS

KEY FIELD *(Q_INFO) [CHARACTER; 8]*

Value held in the foreign key attribute of the primary attribute tables.

FEATURE RELIABILITY *(FEAT_REL) [DATE]*

Date of satellite imagery, field verification or other event which verified the existence of the feature. For first production of Series 2 GEODATA see table in Section 1 chapter 4.3. Only month and year information are significant. The default will be the first of the respective month. If the month is not known then the default is 1 January of that year.

ATTRIBUTE RELIABILITY *(ATT_REL) [DATE]*

Date on which an attribute value of the feature was last verified. If one attribute of the feature is amended it is assumed that all attributes have been verified. For first production of Series 2 GEODATA see table in Section 1 chapter 4.3. The default will be the first of the respective month. If the month is not known then the default is 1 January of that year.

PLANIMETRIC ACCURACY *(PLAN_ACC) [INTEGER; 4]*

Standard deviation in metres of the position of the feature in horizontal coordinates. If a planimetric accuracy for the feature is not applicable relevant or cannot be reliably quoted then this field shall contain 9999.

ELEVATION ACCURACY *(ELEV_ACC) [INTEGER; 4]*

Standard deviation in metres of the accuracy of the elevation coordinates of the feature.

SOURCE AUTHORITY *(SOURCE) [CHARACTER; 50]*

Official name of the authority which originated the spatial object.

5.2 Tile Quality Information Table

The Tile Quality Information Table is a secondary table holding quality information about the data set in general. Each layer has attached its own copy of this table, which has eight fields.

COLUMNS

TILE NAME *(TILE_NAME) [CHARACTER; 50]*

TILE CODE OR MAP NUMBER *(TILE_CODE) [CHARACTER; 10]*

THEME *(THEME) [CHARACTER, 20]*

TECHNICAL SPECIFICATION / VERSION *(TECH_SPEC) [CHARACTER; 20]*

QUALITY CONTROL PASSED DATE *(QC_PASSED) [DATE]*

FORMAT CONVERSION SOFTWARE *(FMT_CONV_SW) [CHARACTER, 30]*

FORMAT CONVERSION DATE (FMT_CONV_DT) *[DATE]*

DATUM *(DATUM) [CHARACTER, 30]*

5.3 Tile Frequency Table

The Tile Frequency Table is a secondary table holding data quality information about the quantities of each feature class in a layer. Each layer has attached its own copy of this table, which has two fields. Note: the universe polygon will not be listed.

COLUMNS

FEATURE CLASS *(FEAT_CODE) [CHARACTER; 12]*

NUMBER OF FEATURE INSTANCES *(FREQUENCY) [BINARY;4,5,B]*

Examples of the contents held by Tile Quality Information table and the Tile Frequency table can be found in Appendix I.

5.4 Secondary Attribute Tables

Most of the attributes in GEODATA are 'encoded'. The Secondary Attribute Tables set out the meaning of the attribute codes.

The following secondary tables are required:

AUTHORITY

authority [integer; 4]	description [character; 80]
0	Not applicable
1	State/Territory National Parks and Wildlife Service or equivalent
2	Aboriginal and Torres Strait Islander Commission
3	Aboriginal Lands Trust
4	State Wildlife Authority
5	Local Government authority
6	Department of the Environment and Heritage
7	Department of Defence (Commonwealth)
9	State Forestry Commission
10	State/Territory Lands Department
11	Aboriginal Land Council
12	ACT Parks and Conservation Service
13	Other State or Federal Government organisations
14	Great Barrier Reef Marine Park Authority
15	State Department of Primary Industry
16	State Department of Water Resources/Public Works
17	Queensland Department of Family and Community Services and Aboriginal and Islander Affairs
18	Department of Natural Resources, Mines and Energy
19	Conservation and Land Management
20	Department of Indigenous Affairs
9999	Other (not specified)

BUILDING

building [integer; 1]	description [character; 20]
1	OPERATIONAL
2	RUIN
3	ABANDONED HOMESTEAD

CLASSIFICATION

class [integer; 1]	description [character; 20]
0	N/A
1	DUAL CARRIAGEWAY
2	PRINCIPAL ROAD
3	SECONDARY ROAD
4	MINOR ROAD
5	TRACK

CONTOUR

contour [integer; 1]	description [character; 20]
0	N/A
1	STANDARD
2	DEPRESSION
3	CONNECTOR ON CLIFF/ CUTTINGS/ EMBANKMENT/ RAZORBACK
4	CONNECTOR STANDARD
5	INTERPOLATED CONTOUR

COVER DENSITY

coverdensity [integer; 1]	description [character; 10]
0	N/A
1	SPARSE
2	DENSE
3	CLOSED

FACILITY

facility [integer; 1]	description [character; 20]
1	AIRPORT
2	LANDING GROUND
3	HELIPORT

FORMATION

formation [integer; 1]	description [character; 20]
0	N/A
1	SEALED
2	UNSEALED
3	UNKNOWN
4	UNDER CONSTRUCTION

FUNCTION

facility [integer; 2]	description [character; 35]
0	N/A
1	AMBULANCE STATION
2	AGED CARE FACILITY
3	COMMUNITY CENTRE
4	DAY CARE CENTRES / KINDERGARTENS
5	DOCTORS SURGERY
6	FIRE STATION
7	HISTORICAL BUILDING
8	HOSPITAL
9	PLACE OF WORSHIP
10	POLICE STATION
11	POWER STATION
12	PUBLIC HALL
13	REFINERY
14	SCHOOL
15	EMERGENCY SERVICES CENTRE
16	SHOPPING CENTRE
99	OTHER OR FUNCTION UNKNOWN

GAUGE

gauge [integer; 1]	description [character; 20]
0	N/A
1	STANDARD
2	BROAD
3	NARROW
4	OTHER
5	UNKNOWN
6	STANDARD-BROAD
7	STANDARD-NARROW

GROWTH FORM

growthform [integer; 1]	description [character; 20]
0	N/A
1	TREE
2	TREE MALLEE
3	SHRUB
4	MALLEE SHRUB
5	HEATH SHRUB
6	CHENOPOD SHRUB
7	OTHER (UNKNOWN)

HIERARCHY

hierarchy [integer; 1]	description [character; 15]
0	N/A
1	MAJOR
2	MINOR

LOCALITY

locality [integer; 2]	description [character; 25]
1	BAY-INLET-COVE
2	BEACH
3	CAPE-HEADLAND-POINT
4	HOMESTEAD
5	ROAD JUNCTION
6	MOUNTAIN-PEAK-HILL
7	PASS
8	POPULATED PLACE
9	WATERBODY ISLAND
10	PLACE NAME
11	GORGE
12	CEMETERY

PARK

park [integer; 2]	description [character; 20]
0	N/A
1	GARDEN
2	RECREATION AREA
3	GOLF COURSE
4	RACECOURSE
5	OVAL
6	MULTIPLE USE
7	CIVIC SQUARE
8	SHOWGROUND
9	RIFLE RANGE
10	OTHER

PERENNIALITY

perenniality [integer; 1]	description [character; 15]
0	N/A
1	PERENNIAL
2	NON PERENNIAL

PLANTING TYPE

type [integer; 1]	description [character; 40]
1	SOFTWOOD
2	HARDWOOD
3	VINEYARD
4	COFFEE
5	BANANAS
6	TREE NUTS
7	OTHER ORCHARD TYPE (unspecified)

POINT DETERMINATION

point [integer; 1]	description [character; 40]
1	SPOT HEIGHT
2	SPOT HEIGHT IN DEPRESSION
3	SPOT HEIGHT ON SAND RIDGE
4	SPOT HEIGHT CAPTURED FROM CONTOUR

PRODUCT

product [integer; 1]	description [character; 15]
1	WATER
2	GAS
3	OIL
4	GAS AND OIL
5	OTHER
6	UNKNOWN

REEF

reef [integer; 1]	description [character; 15]
1	REEF-CAY
2	SHOAL-BANK-PATCH

RELATIONSHIP

relationship [integer; 1]	description [character; 20]
0	N/A
1	ELEVATED
2	ABOVE GROUND
3	UNDERGROUND
4	BARE
5	TIDAL
6	SUBMERGED

SOURCE

source [integer; 1]	description [character; 40]
1	PRINTED MAP
2	COMPILATION MATERIAL
3	DIGITAL TOPOGRAPHIC DATA

STATE/ TERRITORY

state [integer; 1]	Description [character; 3]
0	N/A
1	ACT
2	JBT
3	NSW
4	NT
5	QLD
6	SA
7	TAS
8	VIC
9	WA

STATUS

status [integer; 1]	description [character; 20]
1	OPERATIONAL
2	ABANDONED
3	UNDER CONSTRUCTION

TRACKS

tracks [integer; 1]	description [character; 10]
1	ONE
2	MULTIPLE
3	UNKNOWN

WATERPOINT

waterpoint [integer; 1]	description [character; 20]
0	N/A
1	NATIVE WELL
2	GNAMMA HOLE
3	SOAK
4	ROCK HOLE
5	POOL

6. Symbol Dictionary

6.1 Symbols

Symbols are arranged in alphanumeric order by symbol number. The same number may be used for different symbols provided they have different spatial object types.

Hot spots and orientation are given for point symbols. The hot spot is the location on the symbol of the point feature in the database which the symbol represents. Where a value is given for orientation, the example in the symbol dictionary is aligned in that orientation. Where no value is given the orientation is not used for that feature and it is shown in the default orientation of 0.

For chain features the symbol is the length of the feature and centred on the feature unless otherwise stated.

Measurements follow these conventions: for Point symbols the measurement will be to the outer boundary of the symbol unless otherwise indicated; for Chains measurements will be from line centre to line centre for spacing ticks etc and from line centre to the edge for tick lengths and verges. Both conventions for chains will be unless otherwise indicated.

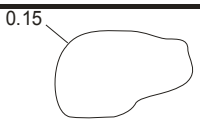
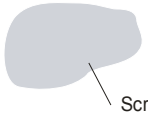
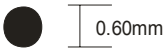
Screen angles will be measured in a clockwise direction from horizontal.

Samples of screens referenced are given in the following section.

All measurements are in mm

Screen: LINE/PATTERN/DOT_%_ANGLE_LPI_COLOUR
eg: Screen: LINE_25_45_41_RED 485

Symbol Number | Type | Feature | Description | Symbol colour is Black unless otherwise specified

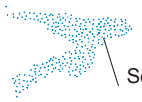
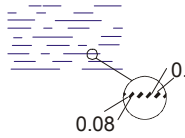
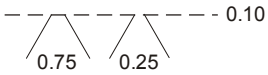
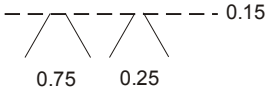
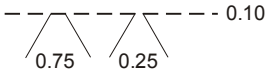
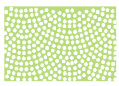
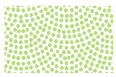
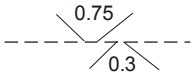
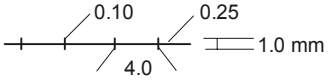
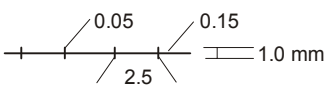
Number	Type	Feature	Description
10	*Polygon*	Lake *perennial* Canal Watercourse *perennial* Reservoir Sea	 Dot_20_105_150_ Process Blue
102	*Chain*	Relief area line *Bounding open cut/ mining area*	
102	*Polygon*	Open cut/ mining area	 Screen: Dot_10_45_150_Black
103	*Point*	Gas well	 Hot spot at the centre of the circle
106	*Point*	Mine	
11	*Point*	Bore	 Colour: Process Blue Hot spot at the centre of the circle

SYMBOL DICTIONARY

All measurements are in mm

Screen: LINE/PATTERN/DOT_%_ANGLE_LPI_COLOUR
eg: Screen: LINE_25_45_41_RED 485

Symbol colour is Black unless otherwise specified

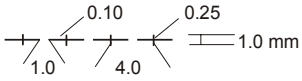
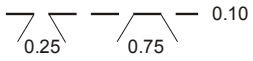
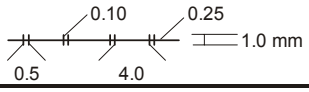
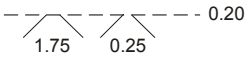
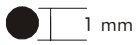
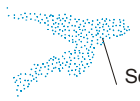
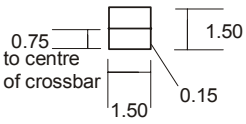
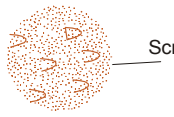
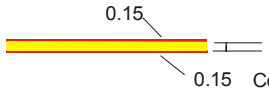
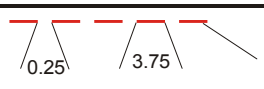
Symbol Number	Type	Feature	Description
11	*Polygon*	Lake *non-perennial* Watercourse *non-perennial*	 Screen: Equivalent to Screen Random Dot 1 100% PROCESS BLUE
114	*Chain*	Waterline *Bounding salt evaporator & settling pond* Salt evaporator internal line Settling pond internal line	 Colour: Process Blue
14	*Polygon*	Land subject to inundation	 A minimum of two lines will be included in each polygon. Sufficient lines will be included in small polygons to indicate their shape. Note: The horizontal line will be broken by a line screen at 45°. Pattern_100%_ Process Blue Equivalent to Screen SMW-4
170	*Chain*	Built-up area line *Bounding Rubbish tip*	
183	*Chain*	Conveyor	
2	*Polygon*	Woody Vegetation *All 250K or Closed (100K)*	 Screens: Dot_15%_60_150_Green PMS 347 Dot_30%_90_150_Process Yellow
20	*Chain*	Ferry route	
200	*Polygon*	Woody Vegetation *Dense*	 Pattern Screen: DW-10 Screens: Dot_15%_60_150_Green PMS 347 Dot_30%_90_150_Process Yellow
201	*Polygon*	Woody Vegetation *Sparse*	 Pattern Screen: DW-9 Screens: Dot_15%_60_150_Green PMS 347 Dot_30%_90_150_Process Yellow
205	*Chain*	Railway and Road Tunnel	 0.1 mm lineweight
206	*Chain*	Railway *Single*	 Cross ties at 90° to the line and centred on the line
208	*Chain*	Railway *Light*	 Cross ties at 90° to the line and centred on the line

SYMBOL DICTIONARY

All measurements are in mm

Screen: LINE/PATTERN/DOT_%_ANGLE_LPI_COLOUR
eg: Screen: LINE_25_45_41_RED 485

Symbol colour is Black unless otherwise specified

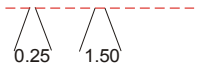
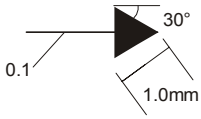
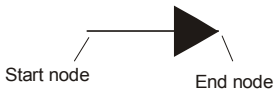
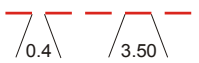
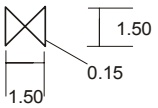
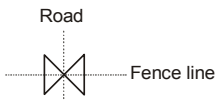
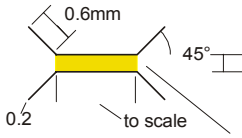
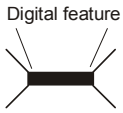
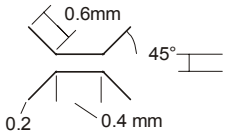
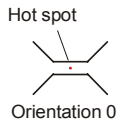
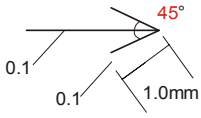
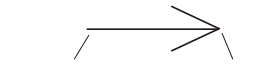
Symbol Number	Type	Feature	Description
209	*Chain*	Railway *Abandoned*	 Cross ties at 90° to the line and centred on the line. Gaps centred between cross ties
21	*Chain*	Ford	
210	*Chain*	Railway *Multiple*	 Cross ties at 90° to the line and centred on the line
22	*Chain*	Foot track	
22	*Polygon*	Foreshore flat Sand	 Screen: Equivalent to Screen Random Dot 1 Solid BROWN 471
222	*Point*	Railway station	 Hot spot at the centre of the circle
23	*Polygon*	Saline coastal flat Salt evaporator Settling ponds	 Screen: Equivalent to Screen Random Dot 1 100% PROCESS BLUE
24	*Polygon*	Park	 Screen: Dot_80%_60_150_Green PMS 347
245	*Chain*	Railway causeway Road causeway	 If feat_wid is 0.15 or 0.25 the symbol is 0.5 wide and solid black. For other valid feat_wid values the symbol is 0.4 plus the value of feat_wid wide and the infill is the value of feat_wid wide and solid red PMS 485.
25	*Point*	Stock grid	 Hot spot at centre of square Orientation 0 Road 
25	*Polygon*	Sand dunes	 Screen: Equivalent to Screen Sand Dunes 1 100% BROWN PMS 471
250	*Chain*	Road *Dual carriageway*	 Digital feature lies halfway between the two lines (width of gap) Gap will have 100% Process Yellow Infill Colour: 100% Red PMS 485
251	*Chain*	Road *Principal sealed*	Colour: 100% Red PMS 485
252	*Chain*	Road *Under construction*	 Lineweight as per classification Colour: 100% Red PMS 485
253	*Chain*	Road *Minor unsealed*	 Colour: 100% Red PMS 485

SYMBOL DICTIONARY

All measurements are in mm

Screen: LINE/PATTERN/DOT_%_ANGLE_LPI_COLOUR
eg: Screen: LINE_25_45_41_RED 485

Symbol Number | Type | Feature | Description — Symbol colour is Black unless otherwise specified

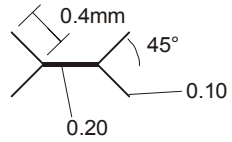
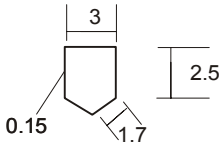
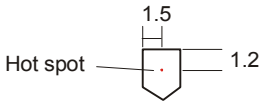
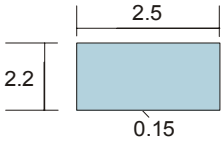
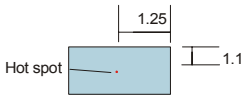
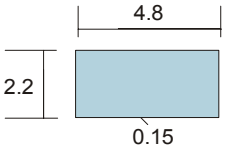
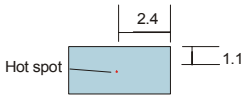
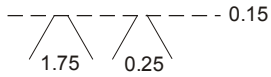
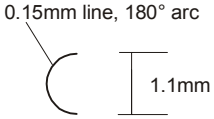
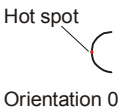
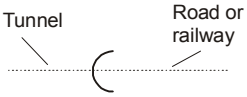
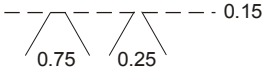
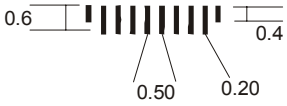
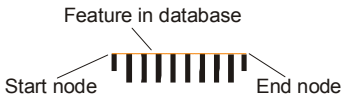
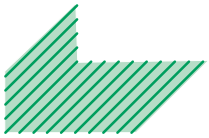
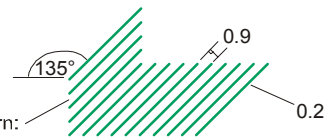
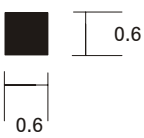
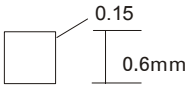
Symbol Number	Type	Feature	Description
254	Chain	Road *Vehicular track*	 Colour: 100% Red PMS 485
255	Chain	Road destination arrow *(With Arrow)*	 
256	Chain	Road *Secondary sealed*	Colour: 100% Red PMS 485
257	Chain	Road *Minor sealed*	Colour: 100% Red PMS 485
258	Chain	Road *Principal unsealed*	 Colour: 100% Red PMS 485
259	Chain	Road *Secondary unsealed*	 Colour: 100% Red PMS 485
26	Point	Gate	  
26	Polygon	Building *Building type: operational*	
260	Chain	Railway bridge Road bridge	 Infill the lineweight of the road or railway symbol.  Where the value of feat_wid is 0.15 or 025 the infill will be solid black. For other valid feat_wid values the infill will be solid red PMS 485.
260	Point	Railway bridge Road bridge	 Gap of the lineweight of the road or railway symbol. 
265	Chain	Feature Pointer	 
266	Chain	Railway Overpass	0.2mm space on either side of inner rail symbol will mask all rail and road features which cross its path (measurement to be taken from edge of rail line symbol)  Lineweight of the rail symbol (feat_wid).
267	Chain	Road Overpass	0.2mm space on either side of inner road symbol will mask all rail and road features which cross its path (measurement to be taken from edge of road line symbol)  lineweight of the road symbol (feat_wid).

SYMBOL DICTIONARY

All measurements are in mm

Screen: LINE/PATTERN/DOT_%_ANGLE_LPI_COLOUR
eg: Screen: LINE_25_45_41_RED 485

Symbol colour is Black unless otherwise specified

Symbol Number	Type	Feature	Description
268	*Chain*	Foot bridge	 Digital feature 
27	*Point*	Route marker - national	 Route Number in black as annotation feature 
28	*Point*	Route marker - State	 Route Number in black as annotation feature  Infill: Screen: DOT_20%_105_150_PROCESS BLUE
281	*Point*	Route marker - State (oversize)	 Route Number in black as annotation feature  Infill: Screen: DOT_20%_105_150_PROCESS BLUE
281	*Chain*	Pipeline *above ground & elevated(not water)*	
282	*Chain*	Pipeline *underground (not water)*	
290	*Point*	Transition point *On roads and railways*	  
30	*Chain*	Aerial Cableway	
31	*Chain*	Embankment	 
33	*Chain*	Sand ridge	 0.25 line screened to Dot_60_90_150_BROWN PMS 471
4	*Polygon*	Rainforest	 Screens: Dot_15_60_150_Green 347 Dot_30_90_150_Process Yellow with Line_solid_Green 347 Pattern: 
40	*Point*	Locality *Locality code: Homestead* & Building *Significant (under size)*	 Hot spot at the centre of the square
41	*Point*	Building Building code: ruin	 Hot spot at the centre of the square

SYMBOL DICTIONARY

All measurements are in mm

Screen: LINE/PATTERN/DOT_%_ANGLE_LPI_COLOUR
eg: Screen: LINE_25_45_41_RED 485

Symbol colour is Black unless otherwise specified

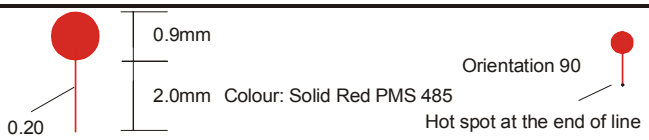
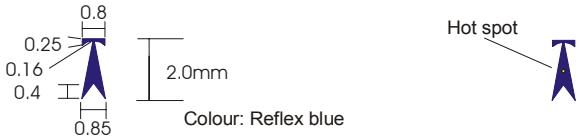
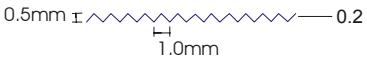
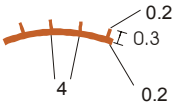
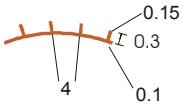
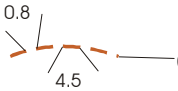
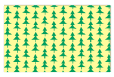
Symbol Number	Type	Feature	Description
42	*Chain*	Lock Line & Road Destination Arrow (without arrow)	0.10 Length as required River Point of Lock faces upstream
420	*Point*	Locality Locality code: populated place & place name	1.2 Hot spot at the centre of the circle Red circle: Colour red PMS 485 Yellow fill: Colour Solid Process Yellow 0.10
420	*Polygon*	Builtup area	Screen: DOT_30_75_150_RED PMS 485
430	*Point*	Building Building code: operational & abandoned homestead	0.5 mm Hot spot at the centre of the square
433	*Point*	Yard	1mm Hot spot at the centre of square 0.1
434	*Point*	Windpump	1.5mm Hot spot 1.4mm centre of base line to centre of cross 0.15 mm line 1.1mm
45	*Chain*	Road on dam	0.15 Solid Red PMS 485 infill Spacing is dependent on road/rail width
451	*Point*	Locality Cemetery	0.75mm Hot spot at the centre of the circle 0.10
5	*Polygon*	Orchard or Vineyard	1.0 mm line centre to line centre Dot_40_90_150_Process Yellow with 0.05mm lines 100% Process Blue at 45 degrees
50	*Point*	Bench mark	0.5 Hot spot at the centre of the circle
501	*Point*	Landmark	0.75mm Hot spot at the centre of the circle 0.10
51	*Point*	Horizontal control point	0.15 line and dot diameter 1.5 Hot spot at the centre of the dot within the triangle 1.5
52	*Point*	Spot elevation Locality *Mountain-peak-hill & place name*	0.375mm Hot spot at the centre of the circle

SYMBOL DICTIONARY

All measurements are in mm

Screen: LINE/PATTERN/DOT_%_ANGLE_LPI_COLOUR
eg: Screen: LINE_25_45_41_RED 485

Symbol Number | Feature Type | Description | Symbol colour is Black unless otherwise specified

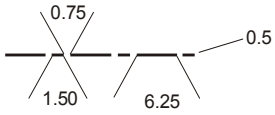
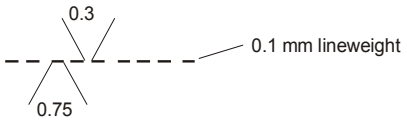
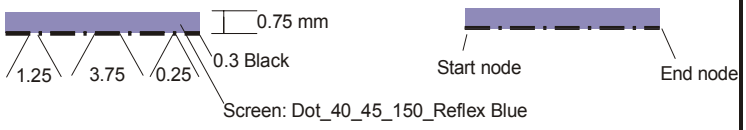
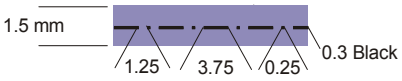
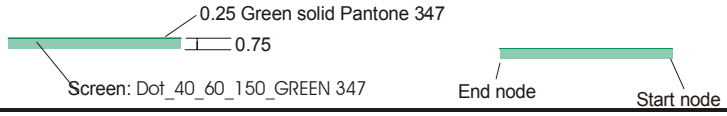
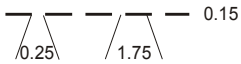
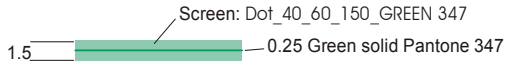
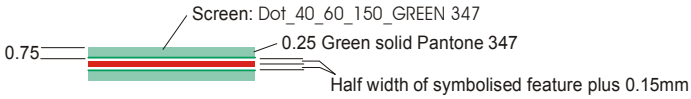
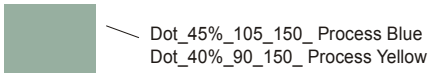
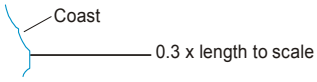
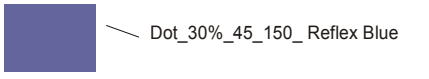
Symbol Number	Feature Type	Description	
54	*Point*	Kilometric distance indicator	 Colour: Solid Red PMS 485
540	*Point*	Powerline pylon	 Colour: Reflex blue
541	*Chain*	Powerline	Colour: Reflex blue
542	*Chain*	Powerline *(100K only)*	 Colour: Reflex Blue
55	*Chain*	Contour *Index standard*	 Colour: Solid PMS 471
56	*Chain*	Contour *Standard*	 Colour: Solid PMS 471
57	*Chain*	Contour *Index depression*	 ticks at 90° to line Colour: Solid PMS 471 
573	*Chain*	Grid line *Standard*	 Colour: Solid Process Blue
574	*Chain*	Grid line *100 000 m @ 250K* *10 000m @ 100K*	 Colour: Solid Process Blue
575	*Chain*	Graticule line	
58	*Chain*	Contour *Standard Depression*	 ticks at 90° to line Colour: Solid PMS 471 
59	*Chain*	Auxiliary Contour	 Colour: Solid PMS 471
6	*Polygon*	Plantation *All features at 250K & Softwood (100K only)*	 Screens: Dot_40%_90_150_Process Yellow with Pattern_solid_Process Blue Pattern equivalent to Screen MP-2
60	*Chain*	Building & Cultural Area line *Bounding ruin* Built-up area line *Bounding cemetery*	
600	*Polygon*	Plantation *Hardwood (100K only)*	 Screens: Dot_40%_90_150_Process Yellow with Pattern_solid_Process Blue Pattern equivalent to Screen Hardwood

SYMBOL DICTIONARY

All measurements are in mm

Screen: LINE/PATTERN/DOT_%_ANGLE_LPI_COLOUR
eg: Screen: LINE_25_45_41_RED 485

Symbol colour is Black unless otherwise specified

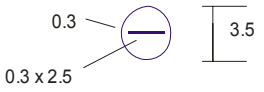
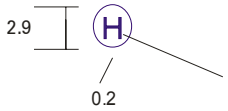
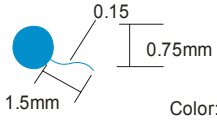
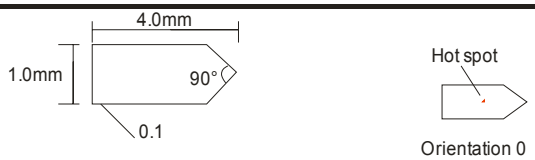
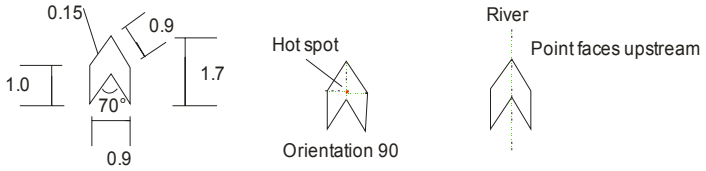
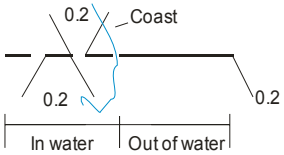
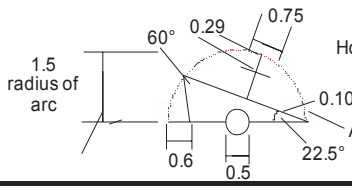
Symbol Number	Type	Feature	Description
62	*Chain*	Boundary - International	
63	*Chain*	Cultural Area Line *Bounding Landmark Area*	
64	*Chain*	Prohibited area line *Single boundary*	
641	*Chain*	Prohibited area line *Dual boundary*	 Note: black line on the boundary Screen: Dot_40_45_150_Reflex Blue
65	*Chain*	Reserve line *Single boundary*	
66	*Chain*	Tropic of Capricorn	
68	*Chain*	Reserve line *Dual boundary not coincident with a symbolised feature*	 Note: solid green line on the boundary
681	*Chain*	Reserve line *Dual boundary coincident with a symbolised feature*	 Note: solid green line on the boundary
7	*Polygon*	Mangrove	
70	*Chain*	Jetty	
700	*Polygon*	Aircraft Facility Polygon *Airport and Landing Ground*	
701	*Point*	Aircraft facility Point *Airport*	
702	*Chain*	Aircraft facility line	

SYMBOL DICTIONARY

All measurements are in mm

Screen: LINE/PATTERN/DOT_%_ANGLE_LPI_COLOUR
eg: Screen: LINE_25_45_41_RED 485

Symbol Number | Feature Type | Description | Symbol colour is Black unless otherwise specified

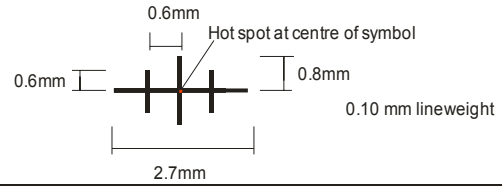
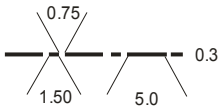
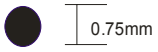
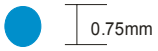
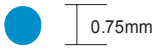
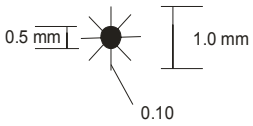
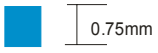
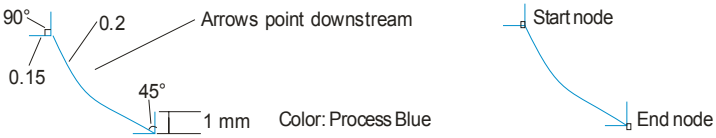
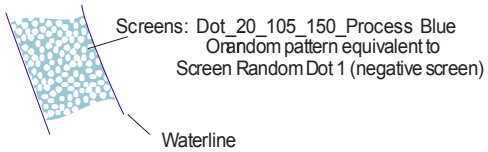
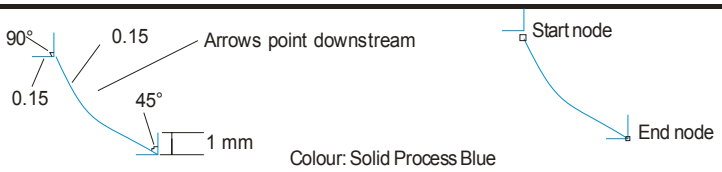
Symbol Number	Feature Type	Description	
703	*Point*	Aircraft facility Point *Landing ground*	 Hot spot at the centre of the circle Orientation 0. Colour: Reflex Blue
706	*Chain*	Runway centre line	0.4mm Colour: Reflex Blue
708	*Point*	Aircraft facility Point *Heliport*	 Colour: Reflex Blue Hot spot at the centre of the circle Line weight for vertical bars of H 0.4mm, Line weight for horizontal bar of H 0.3mm, Height of H 1.75 mm, Width of H 1.42mm Crossbar halfway up uprights, centre of crossbar at centre of circle.
709	*Chain*	Taxiway	0.30 Colour: Reflex Blue
71	*Chain*	Sea wall	0.30
72	*Point*	Lighthouse	 Hot spot at the centre of the circle
73	*Point*	Spring	 Color: Process Blue Hot spot at the centre of the circle Orientation 0
751	*Chain*	Breakwater	0.3
752	*Chain*	Wharf	0.3
753	*Point*	Dry dock	
754	*Point*	Lock	
755	*Chain*	Boat ramp	
756	*Point*	Wreck *Bare or Tidal*	 Hot spot at centre of circle at base of symbol Arc for measurement only, not part of symbol

SYMBOL DICTIONARY

All measurements are in mm

Screen: LINE/PATTERN/DOT_%_ANGLE_LPI_COLOUR
eg: Screen: LINE_25_45_41_RED 485

Symbol colour is Black unless otherwise specified

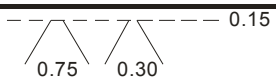
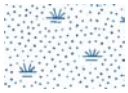
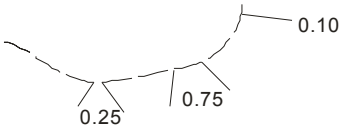
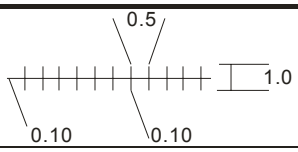
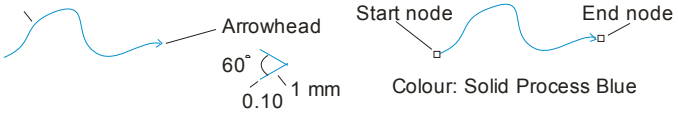
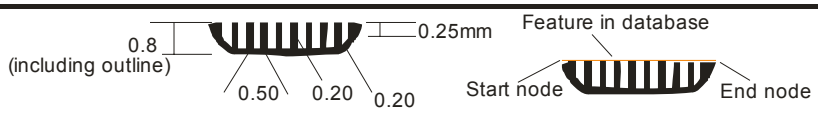
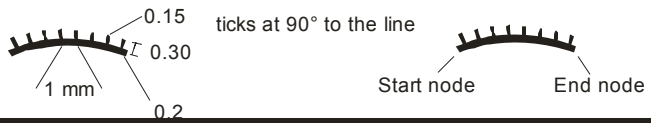
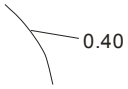
Symbol Number	Type	Feature	Description
759	*Point*	Wreck *Submerged*	
80	*Chain*	State border	
801	*Point*	Storage Tank	 Hot spot at centre of circle
81	*Point*	Waterhole	 Hot spot at centre of circle Color: Process Blue
82	*Point*	Waterpoint	 Hot spot at centre of circle Color: Process Blue
84	*Point*	Pinnacle	 Hot spot at the centre of the circle
86	*Point*	Water tank	 Hot spot at centre of square Color: Solid Process Blue
87	*Chain*	Windbreak	Colour: Green PMS 347
881	*Chain*	Rapids *On major watercourse chain*	
881	*Polygon*	Rapids *On perennial watercourse polygon*	
882	*Chain*	Rapids *On minor watercourse chain*	
89	*Point*	Waterfall	

SYMBOL DICTIONARY

All measurements are in mm

Screen: LINE/PATTERN/DOT_%_ANGLE_LPI_COLOUR
eg: Screen: LINE_25_45_41_RED 485

Symbol colour is Black unless otherwise specified

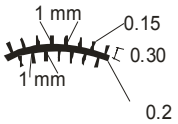
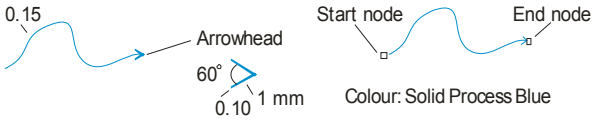
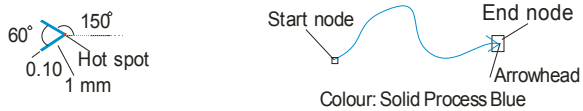
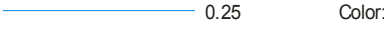
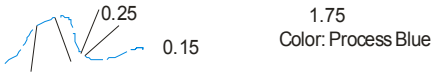
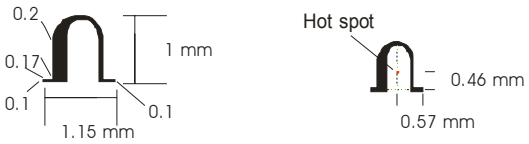
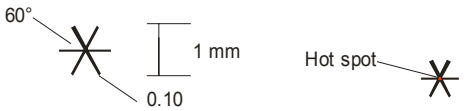
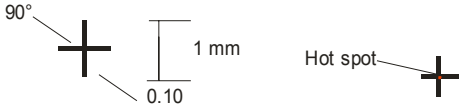
Symbol Number	Type	Feature	Description
90	*Chain*	Relief area line *Bounding a crater & distorted surface*	
90	*Polygon*	Distorted surface Rocky outcrop	Screen: Dot_15_90_150 Brown PMS 471
908	*Polygon*	Swamp Marine Swamp	 Screen: Pattern_100%_ Process Blue Equivalent of Screen P-90 At least one grass symbol is to fall in each polygon Color: Process Blue
91	*Chain*	Watercourse *Hierarchy: Major (100K use only for Non-perennial features)*	
912	*Chain*	Relief area line *Bounding Rocky outcrops*	
92	*Chain*	Watercourse *Hierarchy: Major (250K no flow arrow & 100K use only for Perennial features)*	 Color: Process Blue
921	*Chain*	Levee	 cross ticks at 90° to the line and centre on the line
922	*Chain*	Watercourse *Hierarchy: Major with direction of flow*	 Colour: Solid Process Blue
923	*Chain*	Cutting	
924	*Chain*	Cliff	
925	*Chain*	Dam	
926	*Chain*	Spillway	 Color: Process Blue
927	*Chain*	Fence	

SYMBOL DICTIONARY

All measurements are in mm

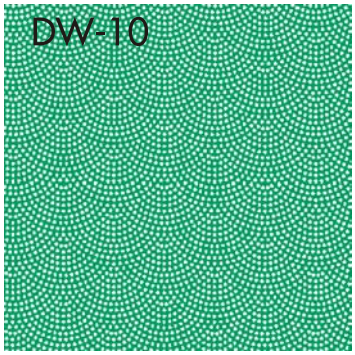
Screen: LINE/PATTERN/DOT_%_ANGLE_LPI_COLOUR
eg: Screen: LINE_25_45_41_RED 485

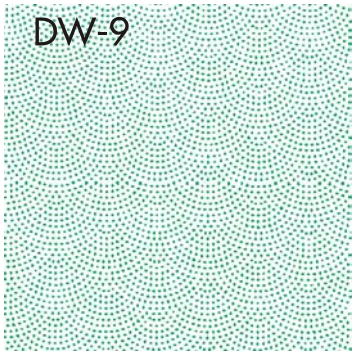
Symbol colour is Black unless otherwise specified

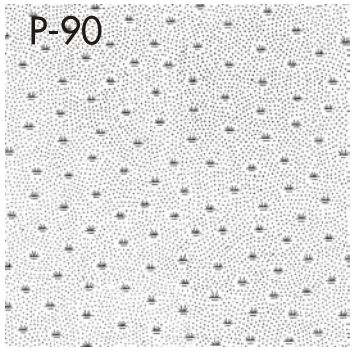
Symbol Number	Type	Feature	Description
929	*Chain*	Razorback	
94	*Chain*	Waterline *definite*	
940	*Chain*	Watercourse *Hierarchy: Minor (250K no flow arrow &100K used for Perennial features only.)*	
942	*Chain*	Watercourse *Hierarchy: Minor with direction of flow*	
944	*Chain*	Watercourse *Hierarchy: Minor (100K use only for Non-perennial features)*	
948	*Point*	Flow Direction Arrow	
947	*Chain*	Canal and Pipeline *Water*	
95	*Chain*	Offshore line *Shoal*	
96	*Point*	Cave	
97	*Polygon*	Reef *Reef and Cay*	 Screen: Dot_50_105_150_PROCESS BLUE
98	*Point*	Offshore rock *Bare and/or Tidal*	
980	*Point*	Offshore rock *Submerged*	
99	*Chain*	Seismic line	

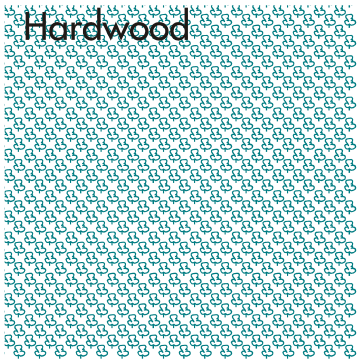
6.2 Screens

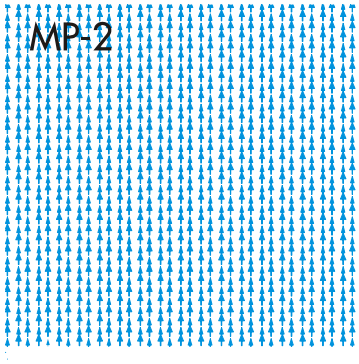
The following representations of the screens were embedded in this document as a WMF graphic, a clearer view of these may occur through increasing the zoom factor of the document. They are supplied as an indication of the screen only, film or eps copies must be used when building the symbol libraries.

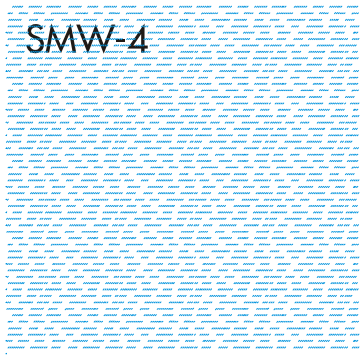


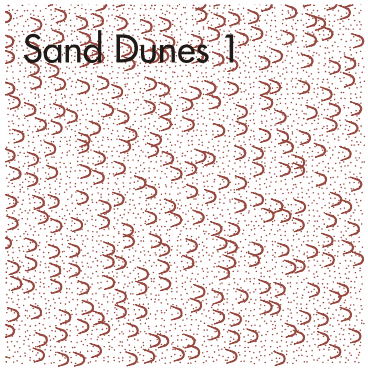












7. Cover Table Definitions

The following tables show the required attribute field definitions, including the column starting position for the tables as held in ARC/INFO coverages. A typical cover name has been shown as an example of how a normal working file would look.

Normal type: indicates standard **ARC/INFO system coverage items.**
Bold type: indicates items common to both GEODATA and working database.
Italic type: indicates items relevant to the Working database only.

7.1 1:250 000 TABLES

****

H5504AAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	H5504AAD#	4	5	B	-		-
21	H5504AAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**NAME**	**50**	**50**	**C**	**-**		**-**
87	**FACILITY**	**1**	**1**	**I**	**-**		**-**
88	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
96	**UFI**	**10**	**10**	**C**	**-**		**-**
106	*SYMBOL*	*4*	*5*	*B*	*-*		*-*
110	*FEAT_WID*	*8*	*10*	*F*	*4*		*-*
118	*ORIENTATION*	*4*	*5*	*B*	*-*		*-*
122	*OLD_UFI*	*10*	*10*	*C*	*-*		*-*

****

H5504BAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	H5504BAD#	4	5	B	-		-
29	H5504BAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
53	**UFI**	**10**	**10**	**C**	**-**		**-**
63	*SYMBOL*	*4*	*5*	*B*	*-*		*-*
67	*OLD_UFI*	*10*	*10*	*C*	*-*		*-*

****

H5504BAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	H5504BAD#	4	5	B	-		-
21	H5504BAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**NAME**	**50**	**50**	**C**	**-**		**-**
87	**PARK**	**2**	**2**	**I**	**-**		**-**
89	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
97	**UFI**	**10**	**10**	**C**	**-**		**-**
107	*SYMBOL*	*4*	*5*	*B*	-		-
111	*TEXT_NOTE*	*30*	*30*	*C*	-		-
141	*OLD_UFI*	*10*	*10*	*C*	-		-

****

H5504CAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	H5504CAD#	4	5	B	-		-
29	H5504CAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**ELEVATION**	**7**	**7**	**N**	**2**		**-**
52	**CONTOUR**	**1**	**1**	**I**	**-**		**-**
53	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
61	**UFI**	**10**	**10**	**C**	**-**		**-**
71	*SYMBOL*	*4*	*5*	*B*	-		-

****

H5504CAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	H5504CAD#	4	5	B	-		-
21	H5504CAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**ELEVATION**	**7**	**7**	**N**	**2**		**-**
44	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
52	**UFI**	**10**	**10**	**C**	**-**		**-**
62	*SYMBOL*	*4*	*5*	*B*	-		-

****

H5504DAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	H5504DAD#	4	5	B	-		-
29	H5504DAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**NAME**	**50**	**50**	**C**	**-**		**-**
95	**PERENNIAL**	**1**	**1**	**I**	**-**		**-**
96	**HIERARCHY**	**1**	**1**	**I**	**-**		**-**
97	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
105	**UFI**	**10**	**10**	**C**	**-**		**-**
115	*SYMBOL*	*4*	*5*	*B*	-		-
119	*TEXT_NOTE*	*30*	*30*	*C*	-		-
149	*OLD_UFI*	*10*	*10*	*C*	-		-

****

H5504DAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	H5504DAD#	4	5	B	-		-
21	H5504DAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**NAME**	**50**	**50**	**C**	**-**		**-**
87	**PERENNIAL**	**1**	**1**	**I**	**-**		**-**
88	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
96	**UFI**	**10**	**10**	**C**	**-**		**-**
106	*SYMBOL*	*4*	*5*	*B*	-		-
110	*FEAT_WID*	*8*	*10*	*F*	*4*		-
118	*ORIENTATION*	*4*	*5*	*B*	-		-
122	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

H5504EAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	H5504EAD#	4	5	B	-		-
21	H5504EAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**ELEVATION**	**7**	**7**	**N**	**2**		**-**
44	**SOURCE**	**1**	**1**	**I**	**-**		**-**
45	**POINT**	**1**	**1**	**I**	**-**		**-**
46	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
54	**UFI**	**10**	**10**	**C**	**-**		**-**
64	*SYMBOL*	*4*	*5*	*B*	-		-
68	*FEAT_WID*	*8*	*10*	*F*	*4*		-
76	*ORIENTATION*	*4*	*5*	*B*	-		-
80	*OLD_UFI*	*10*	*10*	*C*	-		-

****

H5504FAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	H5504FAD#	4	5	B	-		-
29	H5504FAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
53	**UFI**	**10**	**10**	**C**	**-**		**-**
63	*SYMBOL*	*4*	*5*	*B*	-		-
67	*TEXT_NOTE*	*30*	*30*	*C*	-		-
97	*OLD_UFI*	*10*	*10*	*C*	-		-

****

H5504FAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	H5504FAD#	4	5	B	-		-
21	H5504FAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**NAME**	**50**	**50**	**C**	**-**		**-**
87	**STATE**	**1**	**1**	**I**	**-**		**-**
88	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
96	**UFI**	**10**	**10**	**C**	**-**		**-**
106	*SYMBOL*	*4*	*5*	*B*	-		-
110	*OLD_UFI*	*10*	*10*	*C*	-		-

****

H5504GAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	H5504GAD#	4	5	B	-		-
21	H5504GAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**BUILDING**	**1**	**1**	**I**	**-**		**-**
38	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
46	**UFI**	**10**	**10**	**C**	**-**		**-**
56	*SYMBOL*	*4*	*5*	*B*	-		-
60	*FEAT_WID*	*8*	*10*	*F*	*4*		-
68	*ORIENTATION*	*4*	*5*	*B*	-		-
72	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

H5504HAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	H5504HAD#	4	5	B	-		-
29	H5504HAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
53	**UFI**	**10**	**10**	**C**	**-**		**-**
63	*SYMBOL*	*4*	*5*	*B*	-		-
67	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

H5504IAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	H5504IAD#	4	5	B	-		-
29	H5504IAD-ID	4	5	B	-		-
33	*FEAT_CODE*	*12*	*12*	*C*	-		-
45	*SYMBOL*	*4*	*5*	*B*	-		-

****

H5504IAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	H5504IAD#	4	5	B	-		-
21	H5504IAD-ID	4	5	B	-		-
25	*FEAT_CODE*	*12*	*12*	*C*	-		-
37	*SYMBOL*	*4*	*5*	*B*	-		-
41	*TEXT_NOTE*	*30*	*30*	*C*	-		-
71	*BUILDING*	*1*	*1*	*I*	-		-

****

H5504JAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	H5504JAD#	4	5	B	-		-
29	H5504JAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
53	**UFI**	**10**	**10**	**C**	**-**		**-**
63	*SYMBOL*	*4*	*5*	*B*	-		-

****

H5504KAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	H5504KAD#	4	5	B	-		-
29	H5504KAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
53	**UFI**	**10**	**10**	**C**	**-**		**-**
63	*SYMBOL*	*4*	*5*	*B*	-		-

****

H5504LAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	H5504LAD#	4	5	B	-		-
21	H5504LAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**NAME**	**50**	**50**	**C**	**-**		**-**
87	**LOCALITY**	**2**	**2**	**I**	**-**		**-**
89	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
97	**UFI**	**10**	**10**	**C**	**-**		**-**
107	*SYMBOL*	*4*	*5*	*B*	-		-
111	*FEAT_WID*	*8*	*10*	*F*	*4*		-
119	*ORIENTATION*	*4*	*5*	*B*	-		-
123	*TEXT_NOTE*	*30*	*30*	*C*	-		-
153	*OLD_UFI*	*10*	*10*	*C*	-		-

****

H5504MAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	H5504MAD#	4	5	B	-		-
29	H5504MAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
53	**UFI**	**10**	**10**	**C**	**-**		**-**
63	*SYMBOL*	*4*	*5*	*B*	-		-
67	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

H5504MAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	H5504MAD#	4	5	B	-		-
21	H5504MAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
45	**UFI**	**10**	**10**	**C**	**-**		**-**
55	*NAME*	*50*	*50*	*C*	-		-
105	*SYMBOL*	*4*	*5*	*B*	-		-
109	*FEAT_WID*	*8*	*10*	*F*	*4*		-
117	*ORIENTATION*	*4*	*5*	*B*	-		-
121	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

H5504NAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	H5504NAD#	4	5	B	-		-
21	H5504NAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**NAME**	**50**	**50**	**C**	**-**		**-**
87	**RELATIONSHIP**	**1**	**1**	**I**	**-**		**-**
88	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
96	**UFI**	**10**	**10**	**C**	**-**		**-**
106	*SYMBOL*	*4*	*5*	*B*	-		-
110	*FEAT_WID*	*8*	*10*	*F*	*4*		-
118	*ORIENTATION*	*4*	*5*	*B*	-		-
122	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

H5504OAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	H5504OAD#	4	5	B	-		-
29	H5504OAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
53	**UFI**	**10**	**10**	**C**	**-**		**-**
63	*SYMBOL*	*4*	*5*	*B*	-		-
67	*OLD_UFI*	*10*	*10*	*C*	-		-

****

H5504OAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	H5504OAD#	4	5	B	-		-
21	H5504OAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**NAME**	**50**	**50**	**C**	**-**		**-**
87	**RELATIONSHIP**	**1**	**1**	**I**	**-**		**-**
88	**REEF**	**1**	**1**	**I**	**-**		**-**
89	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
97	**UFI**	**10**	**10**	**C**	**-**		**-**
107	*SYMBOL*	*4*	*5*	*B*	-		-
111	*TEXT_NOTE*	*30*	*30*	*C*	-		-
141	*OLD_UFI*	*10*	*10*	*C*	-		-

****

H5504PAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	H5504PAD#	4	5	B	-		-
29	H5504PAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**PRODUCT**	**1**	**1**	**I**	**-**		**-**
46	**RELATIONSHIP**	**1**	**1**	**I**	**-**		**-**
47	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
55	**UFI**	**10**	**10**	**C**	**-**		**-**
65	*NAME*	*50*	*50*	*C*	-		-
115	*SYMBOL*	*4*	*5*	*B*	-		-
119	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

H5504QAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	H5504QAD#	4	5	B	-		-
29	H5504QAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
53	**UFI**	**10**	**10**	**C**	**-**		**-**
63	*SYMBOL*	*4*	*5*	*B*	-		-

****

H5504QAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	H5504QAD#	4	5	B	-		-
21	H5504QAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
45	**UFI**	**10**	**10**	**C**	**-**		**-**
55	*NAME*	*50*	*50*	*C*	-		-
105	*SYMBOL*	*4*	*5*	*B*	-		-
109	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

H5504RAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	H5504RAD#	4	5	B	-		-
29	H5504RAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**NAME**	**50**	**50**	**C**	**-**		**-**
95	**TRACKS**	**1**	**1**	**I**	**-**		**-**
96	**STATUS**	**1**	**1**	**I**	**-**		**-**
97	**GAUGE**	**1**	**1**	**I**	**-**		**-**
98	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
106	**UFI**	**10**	**10**	**C**	**-**		**-**
116	*SYMBOL*	*4*	*5*	*B*	-		-
120	*FEAT_WID*	*8*	*10*	*F*	*4*		-
128	*TEXT_NOTE*	*30*	*30*	*C*	-		-
158	*OLD_UFI*	*10*	*10*	*C*	-		-

****

H5504RAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	H5504RAD#	4	5	B	-		-
21	H5504RAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**NAME**	**50**	**50**	**C**	**-**		**-**
87	**TRACKS**	**1**	**1**	**I**	**-**		**-**
88	**STATUS**	**1**	**1**	**I**	**-**		**-**
89	**GAUGE**	**1**	**1**	**I**	**-**		**-**
90	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
98	**UFI**	**10**	**10**	**C**	**-**		**-**
108	*SYMBOL*	*4*	*5*	*B*	-		-
112	*FEAT_WID*	*8*	*10*	*F*	*4*		-
120	*ORIENTATION*	*4*	*5*	*B*	-		-
124	*TEXT_NOTE*	*30*	*30*	*C*	-		-
154	*OLD_UFI*	*10*	*10*	*C*	-		-

****

H5504SAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	H5504SAD#	4	5	B	-		-
29	H5504SAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**AVERAGE_HEIGHT**	**2**	**2**	**I**	**-**		**-**
47	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
55	**UFI**	**10**	**10**	**C**	**-**		**-**
65	*SYMBOL*	*4*	*5*	*B*	-		-

****

H5504TAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	H5504TAD#	4	5	B	-		-
29	H5504TAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
53	**UFI**	**10**	**10**	**C**	**-**		**-**
63	*SYMBOL*	*4*	*5*	*B*	-		-

****

H5504TAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	H5504TAD#	4	5	B	-		-
21	H5504TAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
45	**UFI**	**10**	**10**	**C**	**-**		**-**
55	*SYMBOL*	*4*	*5*	*B*	-		-
59	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

H5504UAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	H5504UAD#	4	5	B	-		-
29	H5504UAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**NAME**	**50**	**50**	**C**	**-**		**-**
95	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
103	**UFI**	**10**	**10**	**C**	**-**		**-**
113	*SYMBOL*	*4*	*5*	*B*	-		-
117	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

H5504UAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	H5504UAD#	4	5	B	-		-
21	H5504UAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**NAME**	**50**	**50**	**C**	**-**		**-**
87	**DESCRIPTION**	**20**	**20**	**C**	**-**		**-**
107	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
115	**UFI**	**10**	**10**	**C**	**-**		**-**
125	*HEIGHT*	*6*	*6*	*N*	*2*		-
131	*SYMBOL*	*4*	*5*	*B*	-		-
135	*FEAT_WID*	*8*	*10*	*F*	*4*		-
143	*ORIENTATION*	*4*	*5*	*B*	-		-
147	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

H5504VAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	H5504VAD#	4	5	B	-		-
29	H5504VAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**NAME**	**50**	**50**	**C**	**-**		**-**
95	**CLASS**	**1**	**1**	**I**	**-**		**-**
96	**FORMATION**	**1**	**1**	**I**	**-**		**-**
97	**NRN**	**12**	**12**	**C**	**-**		**-**
109	**SRN**	**12**	**12**	**C**	**-**		**-**
121	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
129	**UFI**	**10**	**10**	**C**	**-**		**-**
139	*SYMBOL*	*4*	*5*	*B*	-		-
143	*FEAT_WID*	*8*	*10*	*F*	*4*		-
151	*TEXT_NOTE*	*30*	*30*	*C*	-		-
181	*OLD_UFI*	*10*	*10*	*C*	-		-

****

H5504VAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	H5504VAD#	4	5	B	-		-
21	H5504VAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**NAME**	**50**	**50**	**C**	**-**		**-**
87	**CLASS**	**1**	**1**	**I**	**-**		**-**
88	**FORMATION**	**1**	**1**	**I**	**-**		**-**
89	**NRN**	**12**	**12**	**C**	**-**		**-**
101	**SRN**	**12**	**12**	**C**	**-**		**-**
113	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
121	**UFI**	**10**	**10**	**C**	**-**		**-**
131	*SYMBOL*	*4*	*5*	*B*	-		-
135	*FEAT_WID*	*8*	*10*	*F*	*4*		-
143	*ORIENTATION*	*4*	*5*	*B*	-		-
147	*TEXT_NOTE*	*30*	*30*	*C*	-		-
177	*OLD_UFI*	*10*	*10*	*C*	-		-

****

H5504WAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	H5504WAD#	4	5	B	-		-
29	H5504WAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
53	**UFI**	**10**	**10**	**C**	**-**		**-**
63	*SYMBOL*	*4*	*5*	*B*	-		-
67	*OLD_UFI*	*10*	*10*	*C*	-		-

****

H5504WAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	H5504WAD#	4	5	B	-		-
21	H5504WAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**NAME**	**50**	**50**	**C**	**-**		**-**
87	**PERENNIAL**	**1**	**1**	**I**	**-**		**-**
88	**HIERARCHY**	**1**	**1**	**I**	**-**		**-**
89	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
97	**UFI**	**10**	**10**	**C**	**-**		**-**
107	*SYMBOL*	*4*	*5*	*B*	-		-
111	*TEXT_NOTE*	*30*	*30*	*C*	-		-
141	*OLD_UFI*	*10*	*10*	*C*	-		-

****

H5504XAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	H5504XAD#	4	5	B	-		-
21	H5504XAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**WATERPOINT**	**1**	**1**	**I**	**-**		**-**
38	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
46	**UFI**	**10**	**10**	**C**	**-**		**-**
56	*NAME*	*50*	*50*	*C*	-		-
106	*SYMBOL*	*4*	*5*	*B*	-		-
110	*FEAT_WID*	*8*	*10*	*F*	*4*		-
118	*ORIENTATION*	*4*	*5*	*B*	-		-
122	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

H5504YAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	H5504YAD#	4	5	B	-		-
21	H5504YAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**ELEVATION**	**7**	**7**	**N**	**2**		**-**
44	**CODE**	**24**	**24**	**C**	**-**		**-**
68	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
76	**UFI**	**10**	**10**	**C**	**-**		**-**
86	*NAME*	*50*	*50*	*C*	-		-
136	*SYMBOL*	*4*	*5*	*B*	-		-
140	*FEAT_WID*	*8*	*10*	*F*	*4*		-
148	*ORIENTATION*	*4*	*5*	*B*	-		-
152	*TEXT_NOTE*	*30*	*30*	*C*	-		-
182	*ORDER*	*4*	*4*	*C*	-		-

****

H55041AD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	H55041AD#	4	5	B	-		-
29	H55041AD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
53	**UFI**	**10**	**10**	**C**	**-**		**-**
63	*SYMBOL*	*4*	*5*	*B*	-		-
67	*FEAT_WID*	*8*	*10*	*F*	*4*		-

****

H55041AD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	H55041AD#	4	5	B	-		-
21	H55041AD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**NAME**	**50**	**50**	**C**	**-**		**-**
87	**AUTHORITY**	**4**	**4**	**I**	**-**		**-**
91	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
99	**UFI**	**10**	**10**	**C**	**-**		**-**
109	*SYMBOL*	*4*	*5*	*B*	-		-

****

H55043AD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	H55043AD#	4	5	B	-		-
29	H55043AD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
53	**UFI**	**10**	**10**	**C**	**-**		**-**
63	*SYMBOL*	*4*	*5*	*B*	-		-
67	*FEAT_WID*	*8*	*10*	*F*	*4*		-

****

H55043AD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	H55043AD#	4	5	B	-		-
21	H55043AD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**NAME**	**50**	**50**	**C**	**-**		**-**
87	**AUTHORITY**	**4**	**4**	**I**	**-**		**-**
91	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
99	**UFI**	**10**	**10**	**C**	**-**		**-**
109	*SYMBOL*	*4*	*5*	*B*	-		-

****

H55044AD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	H55044AD#	4	5	B	-		-
29	H55044AD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
53	**UFI**	**10**	**10**	**C**	**-**		**-**
63	*SYMBOL*	*4*	*5*	*B*	-		-
67	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

H55045AD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	H55045AD#	4	5	B	-		-
29	H55045AD-ID	4	5	B	-		-
33	*FEAT_CODE*	*12*	*12*	*C*	-		-
45	*SYMBOL*	*4*	*5*	*B*	-		-
49	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

H55045AD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	H55045AD#	4	5	B	-		-
21	H55045AD-ID	4	5	B	-		-
25	*FEAT_CODE*	*12*	*12*	*C*	-		-
37	*SYMBOL*	*4*	*5*	*B*	-		-
41	*FEAT_WID*	*8*	*10*	*F*	*4*		-
49	*ORIENTATION*	*4*	*5*	*B*	-		-
53	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

H55046AD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	H55046AD#	4	5	B	-		-
29	H55046AD-ID	4	5	B	-		-
33	*FEAT_CODE*	*12*	*12*	*C*	-		-
45	*SYMBOL*	*4*	*5*	*B*	-		-

****

H55047AD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	H55047AD#	4	5	B	-		-
29	H55047AD-ID	4	5	B	-		-
33	*FEAT_CODE*	*12*	*12*	*C*	-		-
45	*SYMBOL*	*4*	*5*	*B*	-		-

****

H55048AD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	H55048AD#	4	5	B	-		-
29	H55048AD-ID	4	5	B	-		-
33	*FEAT_CODE*	*12*	*12*	*C*	-		-

****

H55048AD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	H55048AD#	4	5	B	-		-
21	H55048AD-ID	4	5	B	-		-
25	*FEAT_CODE*	*12*	*12*	*C*	-		-

7.2 1:100 000 TABLES

S7922AAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	S7922AAD#	4	5	B	-		-
29	S7922AAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
53	*SYMBOL*	*4*	*5*	*B*	-		-

****

S7922AAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	S7922AAD#	4	5	B	-		-
21	S7922AAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**NAME**	**50**	**50**	**C**	**-**		**-**
87	**FACILITY**	**1**	**1**	**I**	**-**		**-**
88	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
96	*SYMBOL*	*4*	*5*	*B*	-		-
100	*FEAT_WID*	*8*	*10*	*F*	*4*		-
108	*ORIENTATION*	*4*	*5*	*B*	-		-
112	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

S7922BAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	S7922BAD#	4	5	B	-		-
29	S7922BAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
53	*SYMBOL*	*4*	*5*	*B*	-		-

****

S7922BAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	S7922BAD#	4	5	B	-		-
21	S7922BAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**NAME**	**50**	**50**	**C**	**-**		**-**
87	**PARK**	**2**	**2**	**I**	**-**		**-**
89	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
97	*SYMBOL*	*4*	*5*	*B*	-		-
101	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

S7922CAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	S7922CAD#	4	5	B	-		-
29	S7922CAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**ELEVATION**	**7**	**7**	**N**	**2**		**-**
52	**CONTOUR**	**1**	**1**	**I**	**-**		**-**
53	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
61	*SYMBOL*	*4*	*5*	*B*	-		-

****

S7922CAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	S7922CAD#	4	5	B	-		-
21	S7922CAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**ELEVATION**	**7**	**7**	**N**	**2**		**-**
44	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
52	*SYMBOL*	*4*	*5*	*B*	-		-

****

S7922DAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	S7922DAD#	4	5	B	-		-
29	S7922DAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**NAME**	**50**	**50**	**C**	**-**		**-**
95	**PERENNIAL**	**1**	**1**	**I**	**-**		**-**
96	**HIERARCHY**	**1**	**1**	**I**	**-**		**-**
97	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
105	*SYMBOL*	*4*	*5*	*B*	-		-
109	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

S7922DAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	S7922DAD#	4	5	B	-		-
21	S7922DAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**NAME**	**50**	**50**	**C**	**-**		**-**
87	**PERENNIAL**	**1**	**1**	**I**	**-**		**-**
88	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
96	*SYMBOL*	*4*	*5*	*B*	-		-
100	*FEAT_WID*	*8*	*10*	*F*	*4*		-
108	*ORIENTATION*	*4*	*5*	*B*	-		-
112	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

S7922EAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	S7922EAD#	4	5	B	-		-
21	S7922EAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**ELEVATION**	**7**	**7**	**N**	**2**		**-**
44	**SOURCE**	**1**	**1**	**I**	**-**		**-**
45	**POINT**	**1**	**1**	**I**	**-**		**-**
46	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
54	*SYMBOL*	*4*	*5*	*B*	-		-
58	*FEAT_WID*	*8*	*10*	*F*	*4*		-
66	*ORIENTATION*	*4*	*5*	*B*	-		-

****

S7922FAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	S7922FAD#	4	5	B	-		-
29	S7922FAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
53	*SYMBOL*	*4*	*5*	*B*	-		-
57	TEXT_NOTE	30	30	C	-		-

****

S7922FAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	S7922FAD#	4	5	B	-		-
21	S7922FAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**NAME**	**50**	**50**	**C**	**-**		**-**
87	**STATE**	**1**	**1**	**I**	**-**		**-**
88	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
96	*SYMBOL*	*4*	*5*	*B*	-		-

****

S7922GAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	S7922GAD#	4	5	B	-		-
21	S7922GAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**BUILDING**	**1**	**1**	**I**	**-**		**-**
38	**FUNCTION**	**2**	**2**	**I**	**-**		**-**
40	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
48	*SYMBOL*	*4*	*5*	*B*	-		-
52	*FEAT_WID*	*8*	*10*	*F*	*4*		-
60	*ORIENTATION*	*4*	*5*	*B*	-		-
64	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

S7922HAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	S7922HAD#	4	5	B	-		-
29	S7922HAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
53	*SYMBOL*	*4*	*5*	*B*	-		-
57	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

S7922IAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	S7922IAD#	4	5	B	-		-
29	S7922IAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
53	*SYMBOL*	*4*	*5*	*B*	-		-

****

S7922IAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	S7922IAD#	4	5	B	-		-
21	S7922IAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**BUILDING**	**1**	**1**	**I**	**-**		**-**
38	**FUNCTION**	**2**	**2**	**I**	**-**		**-**
40	**NAME**	**50**	**50**	**C**	**-**		**-**
90	**DESCRIPTION**	**20**	**20**	**C**	**-**		**-**
110	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
118	*SYMBOL*	*4*	*5*	*B*	-		-
122	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

S7922JAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	S7922JAD#	4	5	B	-		-
29	S7922JAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
53	*SYMBOL*	*4*	*5*	*B*	-		-

****

S7922KAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	S7922KAD#	4	5	B	-		-
29	S7922KAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
53	*SYMBOL*	*4*	*5*	*B*	-		-

****

S7922LAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	S7922LAD#	4	5	B	-		-
21	S7922LAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**NAME**	**50**	**50**	**C**	**-**		**-**
87	**LOCALITY**	**2**	**2**	**I**	**-**		**-**
89	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
97	*SYMBOL*	*4*	*5*	*B*	-		-
101	*FEAT_WID*	*8*	*10*	*F*	*4*		-
109	*ORIENTATION*	*4*	*5*	*B*	-		-
113	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

S7922MAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	S7922MAD#	4	5	B	-		-
29	S7922MAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
53	*SYMBOL*	*4*	*5*	*B*	-		-
57	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

S7922MAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	S7922MAD#	4	5	B	-		-
21	S7922MAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
45	*NAME*	*50*	*50*	*C*	-		-
95	*SYMBOL*	*4*	*5*	*B*	-		-
99	*FEAT_WID*	*8*	*10*	*F*	*4*		-
107	*ORIENTATION*	*4*	*5*	*B*	-		-
111	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

S7922NAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	S7922NAD#	4	5	B	-		-
21	S7922NAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**NAME**	**50**	**50**	**C**	**-**		**-**
87	**RELATIONSHIP**	**1**	**1**	**I**	**-**		**-**
88	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
96	*SYMBOL*	*4*	*5*	*B*	-		-
100	*FEAT_WID*	*8*	*10*	*F*	*4*		-
108	*ORIENTATION*	*4*	*5*	*B*	-		-
112	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

S7922OAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	S7922OAD#	4	5	B	-		-
29	S7922OAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
53	*SYMBOL*	*4*	*5*	*B*	-		-

****

S7922OAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	S7922OAD#	4	5	B	-		-
21	S7922OAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**NAME**	**50**	**50**	**C**	**-**		**-**
87	**RELATIONSHIP**	**1**	**1**	**I**	**-**		**-**
88	**REEF**	**1**	**1**	**I**	**-**		**-**
89	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
97	*SYMBOL*	*4*	*5*	*B*	-		-
101	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

S7922PAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	S7922PAD#	4	5	B	-		-
29	S7922PAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**PRODUCT**	**1**	**1**	**I**	**-**		**-**
46	**RELATIONSHIP**	**1**	**1**	**I**	**-**		**-**
47	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
55	*NAME*	*50*	*50*	*C*	-		-
105	*SYMBOL*	*4*	*5*	*B*	-		-
109	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

S7922QAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	S7922QAD#	4	5	B	-		-
29	S7922QAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
53	*SYMBOL*	*4*	*5*	*B*	-		-

****

S7922QAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	S7922QAD#	4	5	B	-		-
21	S7922QAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
45	*NAME*	*50*	*50*	*C*	-		-
95	*SYMBOL*	*4*	*5*	*B*	-		-
99	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

S7922RAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	S7922RAD#	4	5	B	-		-
29	S7922RAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**NAME**	**50**	**50**	**C**	**-**		**-**
95	**TRACKS**	**1**	**1**	**I**	**-**		**-**
96	**STATUS**	**1**	**1**	**I**	**-**		**-**

97	**GAUGE**	**1**	**1**	**I**	**-**	**-**
98	**Q_INFO**	**8**	**8**	**C**	**-**	**-**
106	*SYMBOL*	*4*	*5*	*B*	*-*	*-*
110	*FEAT_WID*	*8*	*10*	*F*	*4*	*-*
118	*TEXT_NOTE*	*30*	*30*	*C*	*-*	*-*

****

S7922RAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	S7922RAD#	4	5	B	-		-
21	S7922RAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**NAME**	**50**	**50**	**C**	**-**		**-**
87	**TRACKS**	**1**	**1**	**I**	**-**		**-**
88	**STATUS**	**1**	**1**	**I**	**-**		**-**
89	**GAUGE**	**1**	**1**	**I**	**-**		**-**
90	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
98	*SYMBOL*	*4*	*5*	*B*	*-*		*-*
102	*FEAT_WID*	*8*	*10*	*F*	*4*		*-*
110	*ORIENTATION*	*4*	*5*	*B*	*-*		*-*
114	*TEXT_NOTE*	*30*	*30*	*C*	*-*		*-*

****

S7922SAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	S7922SAD#	4	5	B	-		-
29	S7922SAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**AVERAGE_HEIGHT**	**2**	**2**	**I**	**-**		**-**
47	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
55	*SYMBOL*	*4*	*5*	*B*	*-*		*-*

****

S7922TAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	S7922TAD#	4	5	B	-		-
29	S7922TAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
53	*SYMBOL*	*4*	*5*	*B*	*-*		*-*

****

S7922TAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	S7922TAD#	4	5	B	-		-
21	S7922TAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**COVERDENSITY**	**1**	**1**	**I**	**-**		**-**
38	**GROWTHFORM**	**1**	**1**	**I**	**-**		**-**
39	**TYPE**	**1**	**1**	**I**	**-**		**-**
40	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
48	*SYMBOL*	*4*	*5*	*B*	-		-
52	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

S7922UAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	S7922UAD#	4	5	B	-		-
29	S7922UAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**NAME**	**50**	**50**	**C**	**-**		**-**
95	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
103	*SYMBOL*	*4*	*5*	*B*	-		-
107	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

S7922UAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	S7922UAD#	4	5	B	-		-
21	S7922UAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**NAME**	**50**	**50**	**C**	**-**		**-**
87	**DESCRIPTION**	**20**	**20**	**C**	**-**		**-**
107	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
115	*HEIGHT*	*6*	*6*	*N*	*2*		-
121	*SYMBOL*	*4*	*5*	*B*	-		-
125	*FEAT_WID*	*8*	*10*	*F*	*4*		-
133	*ORIENTATION*	*4*	*5*	*B*	-		-
137	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

S7922VAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	S7922VAD#	4	5	B	-		-
29	S7922VAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**NAME**	**50**	**50**	**C**	**-**		**-**
95	**CLASS**	**1**	**1**	**I**	**-**		**-**
96	**FORMATION**	**1**	**1**	**I**	**-**		**-**

97	**NRN**	**12**	**12**	**C**	**-**	**-**
109	**SRN**	**12**	**12**	**C**	**-**	**-**
121	**Q_INFO**	**8**	**8**	**C**	**-**	**-**
129	*SYMBOL*	*4*	*5*	*B*	-	-
133	*FEAT_WID*	*8*	*10*	*F*	*4*	-
141	*TEXT_NOTE*	*30*	*30*	*C*	-	-

****

S7922VAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	S7922VAD#	4	5	B	-		-
21	S7922VAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**NAME**	**50**	**50**	**C**	**-**		**-**
87	**CLASS**	**1**	**1**	**I**	**-**		**-**
88	**FORMATION**	**1**	**1**	**I**	**-**		**-**
89	**NRN**	**12**	**12**	**C**	**-**		**-**
101	**SRN**	**12**	**12**	**C**	**-**		**-**
113	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
121	*SYMBOL*	*4*	*5*	*B*	-		-
125	*FEAT_WID*	*8*	*10*	*F*	*4*		-
133	*ORIENTATION*	*4*	*5*	*B*	-		-
137	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

S7922WAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	S7922WAD#	4	5	B	-		-
29	S7922WAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
53	*SYMBOL*	*4*	*5*	*B*	-		-

****

S7922WAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	S7922WAD#	4	5	B	-		-
21	S7922WAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**NAME**	**50**	**50**	**C**	**-**		**-**
87	**PERENNIAL**	**1**	**1**	**I**	**-**		**-**
88	**HIERARCHY**	**1**	**1**	**I**	**-**		**-**
89	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
97	*SYMBOL*	*4*	*5*	*B*	-		-
101	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

S7922XAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	S7922XAD#	4	5	B	-		-
21	S7922XAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**NAME**	**50**	**50**	**C**	**-**		**-**
87	**WATERPOINT**	**1**	**1**	**I**	**-**		**-**
88	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
96	*SYMBOL*	*4*	*5*	*B*	-		-
100	*FEAT_WID*	*8*	*10*	*F*	*4*		-
108	*ORIENTATION*	*4*	*5*	*B*	-		-
112	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

S7922YAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	S7922YAD#	4	5	B	-		-
21	S7922YAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**ELEVATION**	**7**	**7**	**N**	**2**		**-**
44	**CODE**	**24**	**24**	**C**	**-**		**-**
68	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
76	*NAME*	*50*	*50*	*C*	-		-
126	*SYMBOL*	*4*	*5*	*B*	-		-
130	*FEAT_WID*	*8*	*10*	*F*	*4*		-
138	*ORIENTATION*	*4*	*5*	*B*	-		-
142	*TEXT_NOTE*	*30*	*30*	*C*	-		-
172	*ORDER*	*4*	*4*	*C*	-		-

****

S7922ZAD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	S7922ZAD#	4	5	B	-		-
29	S7922ZAD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
53	*SYMBOL*	*4*	*5*	*B*	-		-

****

S7922ZAD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	S7922ZAD#	4	5	B	-		-
21	S7922ZAD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**NAME**	**50**	**50**	**C**	**-**		**-**
87	**FACILITY**	**1**	**1**	**I**	**-**		**-**
88	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
96	*SYMBOL*	*4*	*5*	*B*	-		-

S79221AD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	S79221AD#	4	5	B	-		-
29	S79221AD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
53	*SYMBOL*	*4*	*5*	*B*	-		-
57	*FEAT_WID*	*8*	*10*	*F*	*4*		-
65	*TEXT_NOTE*	*50*	*50*	*C*	-		-

****

S79221AD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	S79221AD#	4	5	B	-		-
21	S79221AD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**NAME**	**50**	**50**	**C**	**-**		**-**
87	**AUTHORITY**	**4**	**4**	**I**	**-**		**-**
91	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
99	*SYMBOL*	*4*	*5*	*B*	-		-

****

S79222AD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	S79222AD#	4	5	B	-		-
29	S79222AD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**ELEVATION**	**7**	**7**	**N**	**2**		**-**
52	**CONTOUR**	**1**	**1**	**I**	**-**		**-**
53	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
61	*SYMBOL*	*4*	*5*	*B*	-		-

****

S79223AD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	S79223AD#	4	5	B	-		-
29	S79223AD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
53	*SYMBOL*	*4*	*5*	*B*	-		-
57	*FEAT_WID*	*8*	*10*	*F*	*4*		-
65	*TEXT_NOTE*	*50*	*50*	*C*	-		-

****

S79223AD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	S79223AD#	4	5	B	-		-
21	S79223AD-ID	4	5	B	-		-
25	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
37	**NAME**	**50**	**50**	**C**	**-**		**-**
87	**AUTHORITY**	**4**	**4**	**I**	**-**		**-**
91	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
99	*SYMBOL*	*4*	*5*	*B*	-		-

****

S79224AD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	S79224AD#	4	5	B	-		-
29	S79224AD-ID	4	5	B	-		-
33	**FEAT_CODE**	**12**	**12**	**C**	**-**		**-**
45	**Q_INFO**	**8**	**8**	**C**	**-**		**-**
53	*SYMBOL*	*4*	*5*	*B*	-		-
57	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

S79225AD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	S79225AD#	4	5	B	-		-
29	S79225AD-ID	4	5	B	-		-
33	*FEAT_CODE*	*12*	*12*	*C*	-		-
45	*SYMBOL*	*4*	*5*	*B*	-		-
49	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

S79225AD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	S79225AD#	4	5	B	-		-
21	S79225AD-ID	4	5	B	-		-
25	*FEAT_CODE*	*12*	*12*	*C*	-		-
37	*SYMBOL*	*4*	*5*	*B*	-		-
41	*FEAT_WID*	*8*	*10*	*F*	*4*		-
49	*ORIENTATION*	*4*	*5*	*B*	-		-
53	*TEXT_NOTE*	*30*	*30*	*C*	-		-

****

S79226AD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	S79226AD#	4	5	B	-		-
29	S79226AD-ID	4	5	B	-		-
33	*FEAT_CODE*	*12*	*12*	*C*	-		-
45	*SYMBOL*	*4*	*5*	*B*	-		-

****

S79227AD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	S79227AD#	4	5	B	-		-
29	S79227AD-ID	4	5	B	-		-
33	*FEAT_CODE*	*12*	*12*	*C*	-		-
45	*SYMBOL*	*4*	*5*	*B*	-		-

****

S79228AD.AAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	FNODE#	4	5	B	-		-
5	TNODE#	4	5	B	-		-
9	LPOLY#	4	5	B	-		-
13	RPOLY#	4	5	B	-		-
17	LENGTH	8	18	F	5		-
25	S79228AD#	4	5	B	-		-
29	S79228AD-ID	4	5	B	-		-
33	*FEAT_CODE*	*12*	*12*	*C*	-		-

****

S79228AD.PAT TABLE

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	N.DEC	ALTERNATE NAME	INDEXED?
1	AREA	8	18	F	5		-
9	PERIMETER	8	18	F	5		-
17	S79228AD#	4	5	B	-		-
21	S79228AD-ID	4	5	B	-		-
25	*FEAT_CODE*	*12*	*12*	*C*	-		-

****

Appendix B - NTMS Map Layout Guides and associated Marginalia information

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1. Introduction

The following information relates to the Layout Guides provided for the 1:250 000 and 1:100 000 mapping guides. The guides should be used in conjunction with the specified sheet sizes, (see Appendix H). The guides are supplemented by the following detailed specifications of the Marginalia and map elements.

2. Layout Guides

1:250 000 Landscape and Portrait Guides

These Guides will be supplied in PDF format.

* *Note: the sample Road Destination Arrows, Distances & Font specifications shown on previous 1:250 000 Layout Guides have been removed for Version 3.6, given that a fuller description for treatment of these arrows (with example variation diagrams) is included in Chapter 11 of this Appendix.*

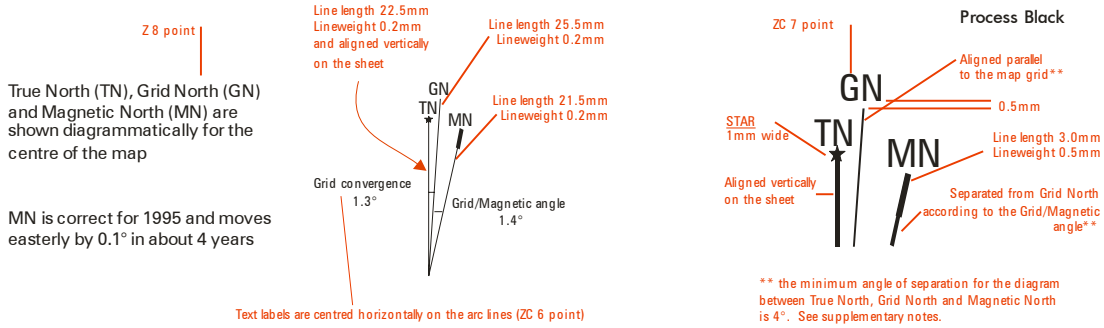
1:100 000 Landscape Guides

This Guide (incorporating both the 6 fold and 7 fold format specifications on the one sheet) will be supplied in PDF format.

3. Magnetic Declination Diagram

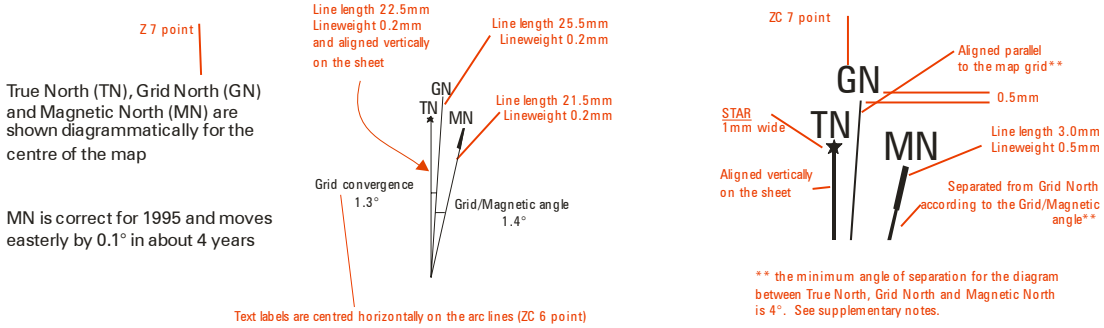
This diagram appears with True North (TN), Grid North (GN) and Magnetic North (MN) values based on, and true for, the centre of the map sheet.

1:250 000 scale diagram



See Map Layout Guide for position within the marginalia

1:100 000 scale diagram



See Map Layout Guide for position within the marginalia

Text

Where the Magnetic North line coincides with the Grid North or True North line, ‘MN’ will be offset to the side. If necessary the text ‘Grid/Magnetic angle’ and ‘Grid convergence will be moved horizontally from their indicated position to avoid clashing with the lines in the diagram.

The grid/magnetic angle label is placed on the left side of the diagram when the MN is west of TN. In this instance the diagram may be moved to accommodate the longer grid/magnetic angle label.

The abbreviations for Magnetic North, True North and Grid North (MN, TN and GN) will be centred above their respective lines and offset by 0.5 mm.

Where the movement of magnetic declination is very small (less than 0.1° in ten years), the following words are used:

MN is correct for (year) and moves
easterly (or westerly) by less than 0.1° in 10 years

Line Offsets

The magnetic declination diagram is only a representative portrayal of the magnetic declination variance. For clarity it will often be necessary to exaggerate the angles between the lines. The overriding principle is that the diagram shows the lines in their correct relative positions and that an attempt has been made to represent the angles as well as possible.

Where the angle between any two lines is less than 0.05° they are shown as coincident.

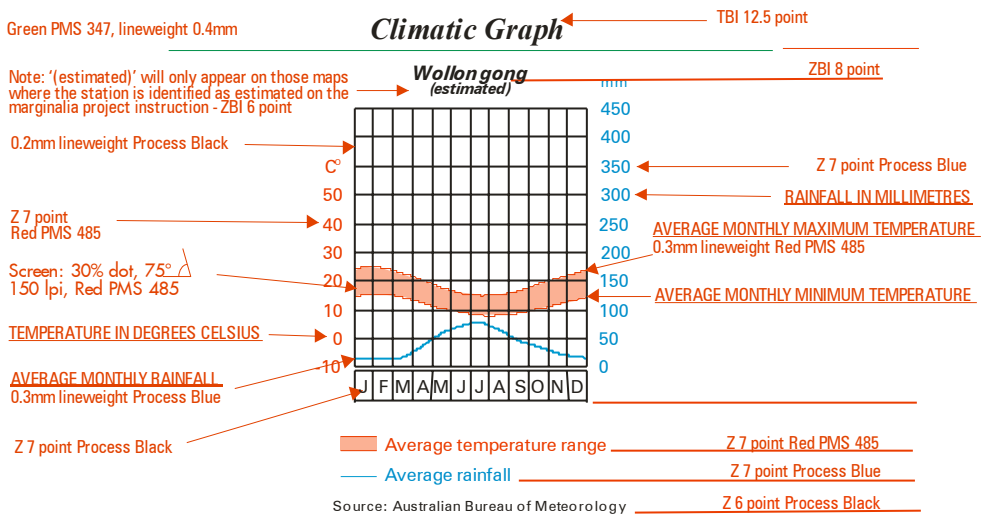
The minimum angle between GN, TN or MN is 4°. Where the angle between any two lines is <4°, the lines are shown 4° apart.

The MN line will be shown at its correct angle to TN if it is greater than 4 degrees from TN and the GN line is not between TN and MN. (Note: the projection is such that GN will always be within 4 degrees of TN.)

4. Climatic Graphs

This graph depicts the average monthly rainfall figures and average monthly minimum and maximum temperatures for the local area.

1:250 000 and 1:100 000 scale (common) diagram



See Map Layout Guide for graph's position within the marginalia

There will be either one or two Climatic Graphs appearing in the marginalia of the 1:250 000 map depending on the geographic location of the sheet. Those maps representing areas subject to different regional climatic variations will have two graphs. For the 1:100 000 map, only one Climate Graph will appear in the marginalia.

The graph itself is divided into squares representing each of the twelve (12) recording months, January to December in the X direction and the Temperature and Rainfall measures in the Y direction.

4.1 Matrix Specifications

Values Matrix

Width (X direction) : 2.7 mm x 12 = total of 32.4 mm
Depth (Y direction -) : 4.0 mm x 9 **=** total of 36 mm
A gap of 0.5 mm (centre to centre of respective lines) is shown between the bottom line of the main graph matrix and the top line of the squares representing the individual Month's boxes at the bottom of the graph.

Month's box
Width (X direction) : 2.7 mm x 12 = total of 32.4 mm
Depth (Y direction -) : 3.5 mm x 1 **=** total of 3.5 mm:

4.2 Temperature / Rainfall lines and screen

Temperature

The left edge of the graph represents the temperature in degrees Celsius, ranging from minus 10° to 50° in 10 degree intervals from the bottom of the primary matrix. Each of the horizontal lines represents 10 degrees.

The Average Maximum and Minimum temperatures for each month of the year are recorded across the matrix, and are represented by two curved lines separated by a screened area.

The average Maximum and Minimum values are plotted by measuring vertically against the Temperature scale (Western edge of matrix) and at the central horizontal position of each of the respective Month boxes.

Due to the figures being plotted in the centre of each box, it is necessary to calculate a value at the extreme Left and Right edges of the matrix to allow the temperature lines to finish correctly. To achieve this for both edges, the temperatures for December and January are averaged and that value plotted.

The screened area will not be masked for the rainfall line.

Rainfall

The left edge of the graph represents rainfall in millimetres, ranging from 0 to 450mm in 50mm intervals from the bottom of the primary matrix. Each of the horizontal lines represents 50mm.

The Average rainfall figures are shown for each month across the matrix, and are represented by a single line. The figures are plotted by measuring vertically against the Rainfall scale (Left edge of matrix) and at the central horizontal position of each of the respective Month boxes.

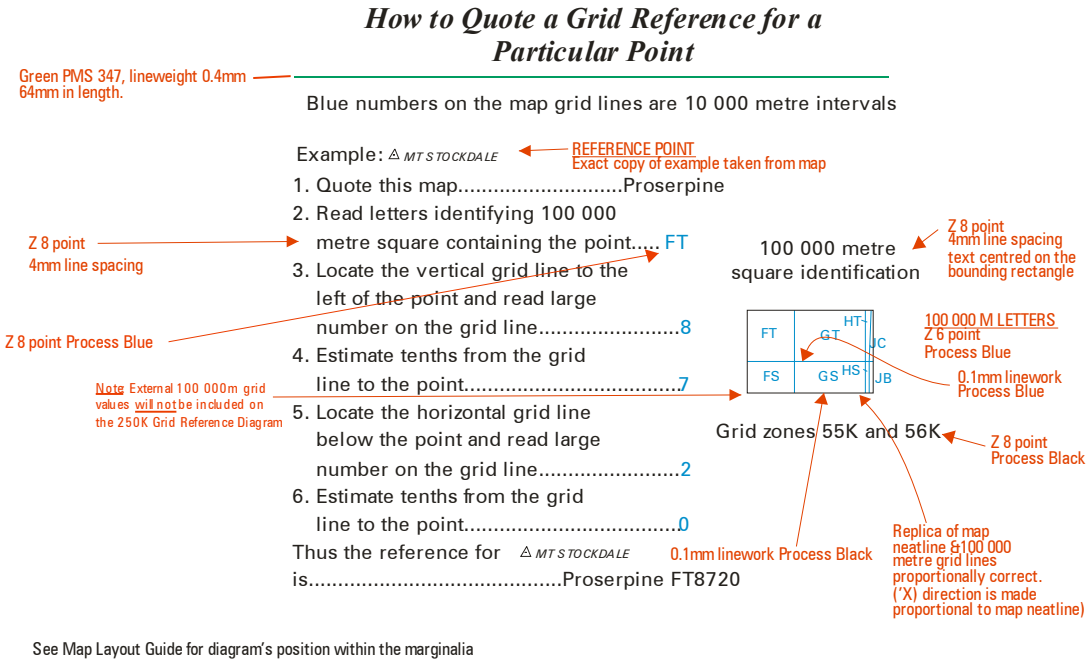
Due to the figures being plotted in the centre of each box, it is necessary to calculate a value at the extreme Left and Right edges of the matrix to allow the average rainfall line to finish correctly. To achieve this for both edges, the average rainfall for December and January are averaged and that value plotted.

Where a monthly rainfall value exceeds 450 mm the rainfall line will be drawn to meet the 450 mm line and then break. The line will then reappear when the values again fall within the range of the graph. Between the plotted monthly values and the 450 mm line the angle of the rainfall line will indicate the magnitude of the next month's value. For example, if February's value is 440 and March's value is 455 the rainfall line will meet the 450 mm line close to the centre of the March box but if March's value is 550 the rainfall line will meet the 450 mm line within the February box.

5. Grid Reference Diagram

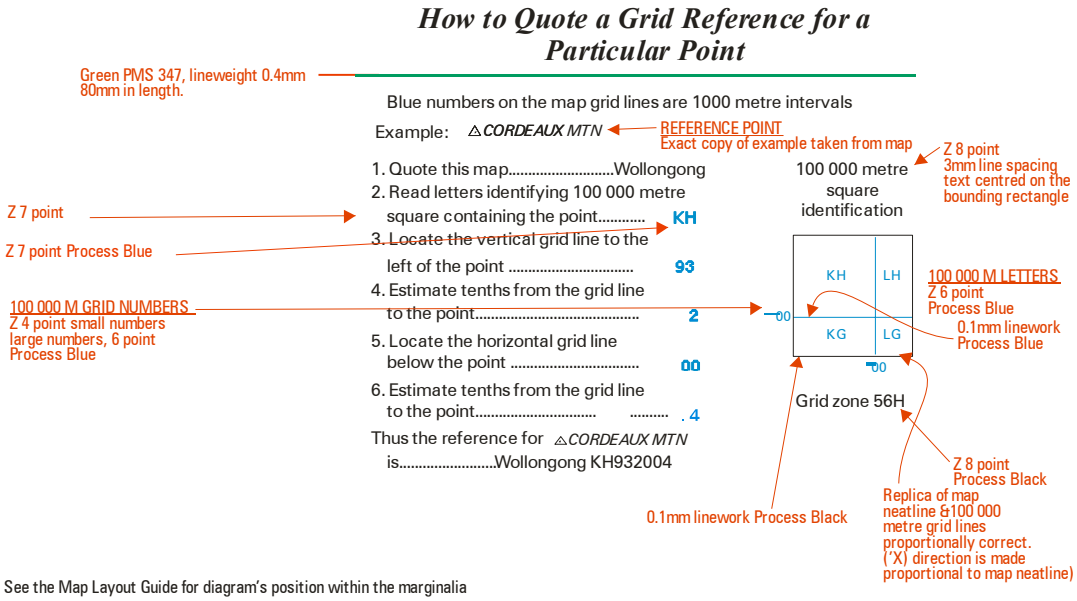
This is diagram in the map marginalia with an example reference point taken from the face of the map.

1:250 000 scale diagram



See Map Layout Guide for diagram's position within the marginalia

1:100 000 scale diagram



See the Map Layout Guide for diagram's position within the marginalia

Example Reference Point

The figures for the Grid Reference Diagram are determined from a predetermined reference point on the face of the Map. The example will be a named point feature, preferably a named hill (no associated elevations will be included however). If a Horizontal Control Point is chosen as the reference point, the name or code will appear, but not the associated spot elevation value. When choosing an example, it is preferable to select a point in an area clear of other detail.

If no named point feature exists on the map the smallest named area feature will be used with reference to the feature's centre. An unnamed Spot elevation is not a suitable point. When choosing an example, it is preferable to select a point in an area clear of detail. The values are positioned against the relevant numbered sections of the reference table.

An exact copy (ie. same name, size, typestyle, and symbol) of the example Reference Point is taken from the map and shown in the same relationship to the reference symbol (eg spot elevation, horizontal control point etc). It is preferable that the name is shown to the right of the reference symbol.

Full Reference Point

This reference is a combination of the Map name, followed by a letter space and the concatenated identification letters and numbers from the preceding individual references.

100 000 metre square identification

The bounding rectangular line is geographically correct to scale (replicates the tile neatline) and is proportionally correct when reduced down to the final diagram scale of 1:10 000 000.

The bounding rectangle should be placed in alignment with the marginalia panel.

The position of the zone boundary lines are also a scaled reduction of the actual 100 000 metre grid line positions. These lines are plotted in the same projection as the map.

The MGA 100 000 Metre Square Identification Guide (diagram for the identification of letters applicable to the map sheet) will be supplied in PDF format.

100 000 Metre Grid Identifiers (1:100 00 scale only)

The Grid Reference diagram at 1:100 000 scale will only show the 100 000 metre grid identifiers which fall within the diagram box. i.e. If a 100 000 metre grid line coincides with the map neatline, the identifier outside the map neatline will be shown on the face of the map but not shown (ie. repeated) on the grid reference diagram.

Grid Zone

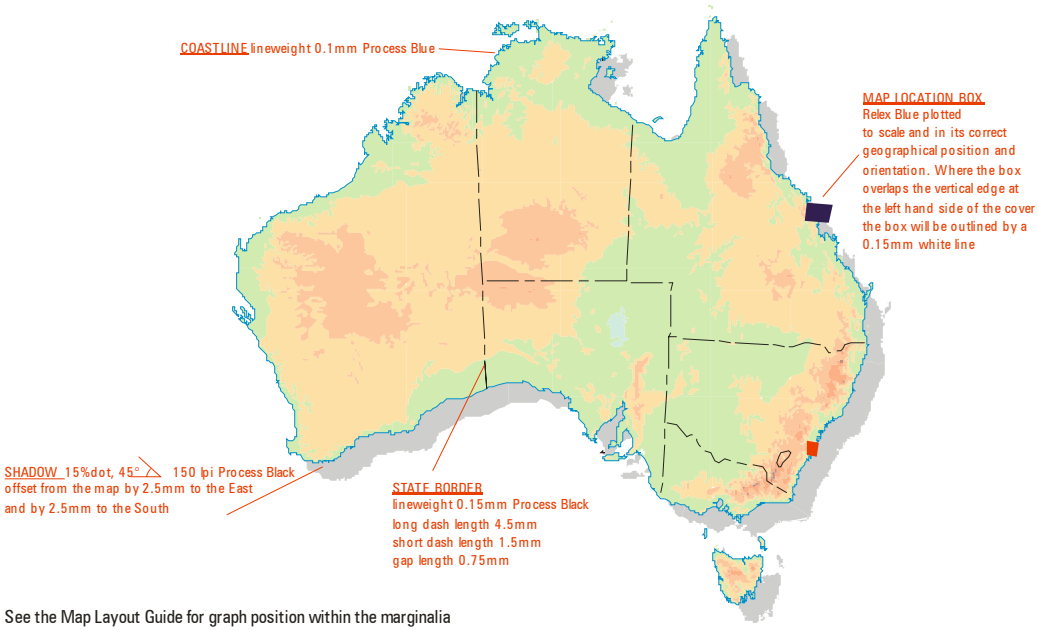
Where a map sheet (including the 1:250 000 bleed edge) straddles more than one grid zone, the grid zones will be listed in the grid reference diagram if the grid zones are labelled on the face of the map. One and two zones will be on a single line, three or four zones will be on two lines as follows:

Grid Zones
55J, 56J, 57J and 58J

6. Map of Australia

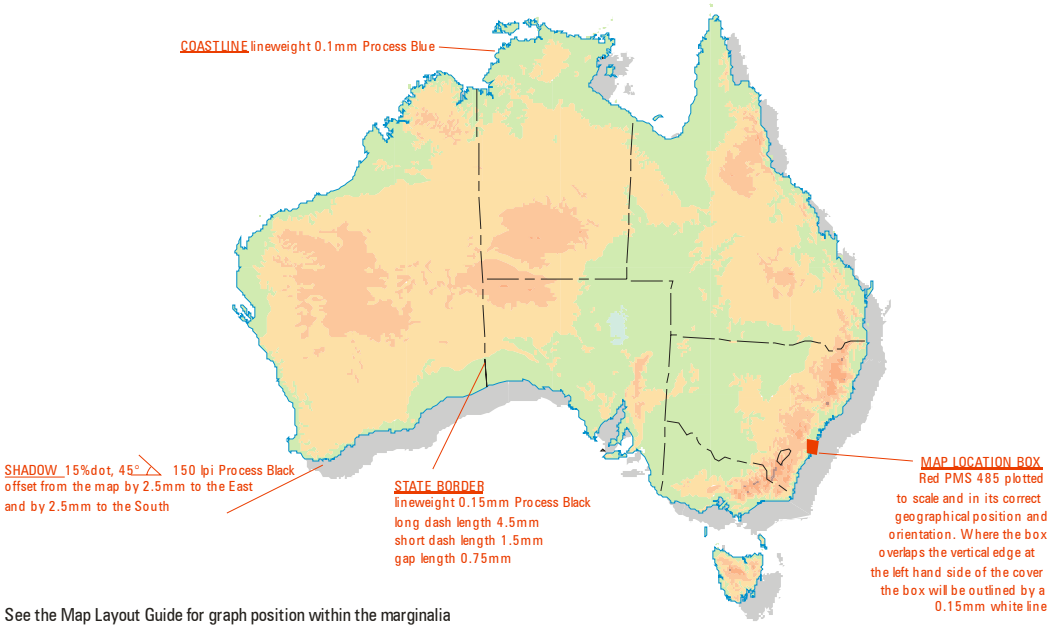
This map shows the individual map location 'box'. This graphic is part of the map front cover marginalia.

1:250 000 scale diagram



See the Map Layout Guide for graph position within the marginalia

1:100 000 scale diagram



The map is drawn at a scale of 1: 45 000 000 on a Lambert Conformal Conic Projection, with Standard Parallels at 18 and 36 degrees, and Central Meridian at 135 degrees West longitude.

Hypsometric Tints

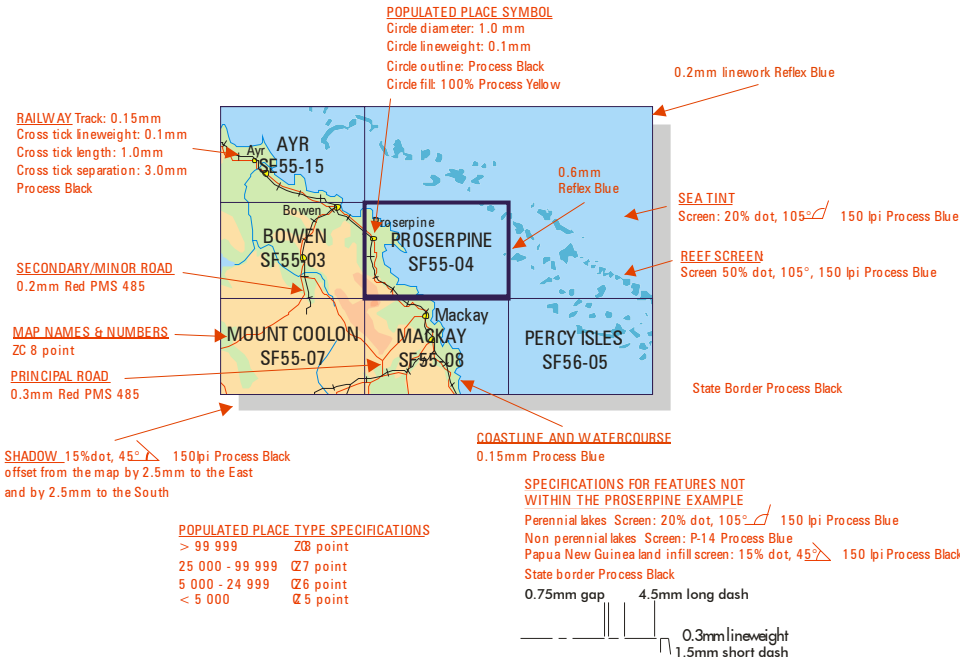
The hypsometric tints shown on the map are based on elevation ranges in the data. The following PMS colour combinations & screen specifications are to be used when printing the various polygon (elevation) classes.

ELEVATION RANGE (in metres)	PMS COLOUR	SCREEN PERCENTAGE	SCREEN ANGLE	SCREEN DENSITY
-200 to 0	Process Blue Process Yellow	10% 10%	105^0 90^0	150 dpi 150 dpi
0 to 200	Process Blue Process Yellow	10% 30%	105^0 90^0	150 dpi 150 dpi
200 to 500	Red, PMS 485 Process Yellow	10% 30%	75^0 90^0	150 dpi 150 dpi
500 to 1000	Red, PMS 485 Process Yellow	20% 30%	75^0 90^0	150 dpi 150 dpi
1000 to 1500	Red, PMS 485 Process Yellow	30% 40%	75^0 90^0	150 dpi 150 dpi
1500 and above	Process Blue Red, PMS 485 Process Yellow	20% 40% 40%	105^0 75^0 90^0	150 dpi 150 dpi 150 dpi

7. Locality Diagram

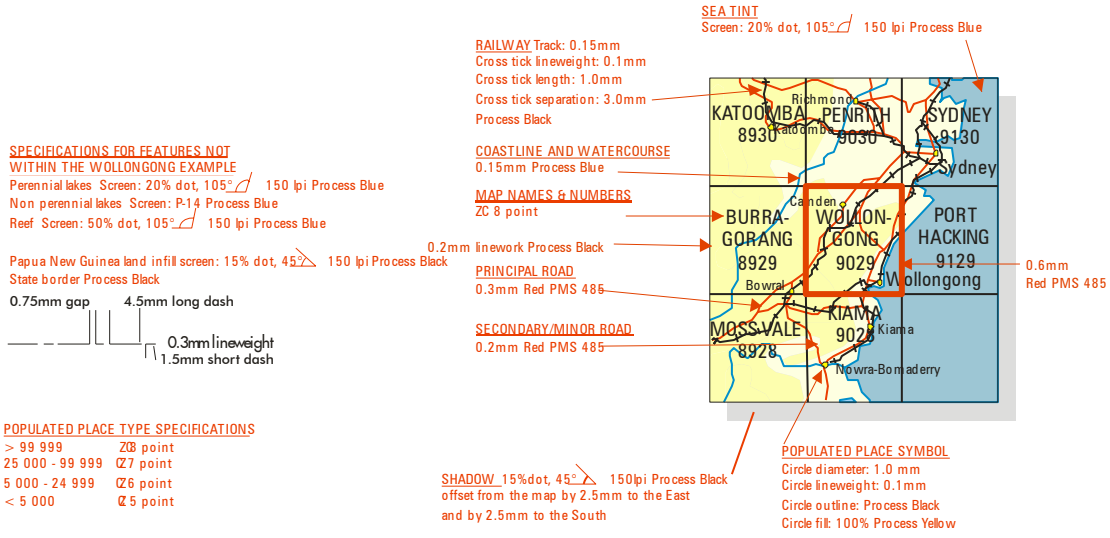
Data for the Locality Diagram will be supplied by Geoscience Australia. This data will be used as supplied, except for the placement of text and the application of the specified symbology.

1:250 000 scale diagram



See the Map Layout Guide for diagram's position within the marginalia

1:100 000 scale diagram



See the Map Layout Guide for diagram's position within the marginalia

1:250 000 scale diagram extents

This diagram is unprojected, and the sheet lines and data are scaled automatically from the data set to fit in the box. The data extent is set at 4.5 degrees wide (X direction) by 3 degrees high (Y direction). This creates a “standard” 9 map diagram where the particular map area is at the centre of 9 non-adjusted maps. For adjusted sheets (see appendix H) the map area in the diagram will be re-centred (off centre) to allow the adjacent sheets to be shown as a whole wherever possible (this precludes having small, untidy “slivers” representing adjoining sheets where type cannot fit).

1:100 000 scale diagram extents

This diagram is unprojected, and the sheet lines and data are scaled automatically from the data set to fit in the box. The data extent is set at 1.5 degrees wide (X direction) by 1.5 degrees high (Y direction). This creates a “standard” 9 map diagram where the particular map area is at the centre of 9 non-adjusted maps. For adjusted sheets (see appendix H) the map area in the diagram will be re-centred (off centre) to allow the adjacent sheets to be shown as a whole wherever possible (this precludes having small, untidy “slivers” representing adjoining sheets where type cannot fit).

General

The hypsometric tints are as for the Map of Australia. Hypsometric tints will be masked for lakes.

Where map coverage ceases around the coastline, the map sheet lines will not be drawn.

Locality text placement will be unambiguous and avoid clashes with railways and state borders. Where a clash is unavoidable the railways and state borders will be broken. The break will be 0.5mm on either side of the type when it crosses the feature.

Map sheet names and numbers will be placed centrally within the map sheet lines wherever possible. Appendix C map indexes provide guidance to hyphenation of map names.

Type sizes for populated place names may be reduced by one point size in areas of clutter to aid placement. Where a clash with other type is unavoidable the populated place name and symbol may be omitted. This option should be used very sparingly and should be particularly avoided where there are few locality names on the diagram.

In remote areas where no populated places exist, very large homesteads can be depicted using Zurich 7 point type and a 0.5mm size building symbol.

A State name is not to be shown in the locality diagram. If the map sheet lines coincide with a State Border symbol, the State Border symbol and sheet line will appear coincidentally.

Masking

Railway Lines should be masked to black text.

Populated place symbols should be cleared of all screens except the yellow infill.

Hypsometric tints should be masked from Lakes and Waterbodies.

8. Graticule and Grid

8.1 Ticks on the Graticule Lines

1:250 000 Scale

Graticule lines will be shown for multiples of 15 minutes. Each line will have ticks at 1 minute intervals. Ticks will also be shown along the western and southern neat lines. Both lines and ticks will have a line weight of 0.2 mm.

Positioning of ticks will be as shown on the map layout guide. The ticks will be 1.25 mm long for 1 minute intervals. Ticks for 1 minute intervals will be on the east side of longitude lines and on the south side of latitude lines except for the southern neatline where the ticks will be on the north side.

Increments of 5 minutes will be longer lines. Where both sides of the line that the ticks cross are within the map the ticks will be centred on the line and the ticks will be 4 mm long. Along the neatline the 5 minute lines will be 2 mm long and within the map area.

1:100 000 Scale

Graticule lines will be shown for multiples of 10 minutes. Each line will have ticks at 1minute intervals. Ticks will also be shown along all neat lines (with the exception of the external AGD66 Datum neat line shown on the northern and eastern edges). Both lines and ticks will have a line weight of 0.2 mm.

Positioning of ticks will be as shown on the map layout guide. The ticks will be 1.0 mm long for 1 minute intervals. Ticks for 1 minute intervals will be on the east side of longitude lines and on the south side of latitude lines except for the southern neatline where the ticks will be on the north side.

Increments of 5 minutes will be longer lines. Where both sides of the line that the ticks cross are within the map the ticks will be centred on the line and the ticks will be 4 mm long. Along the neatline the 5 minute lines will be 2 mm long and within the map area.

8.2 Graticule Values

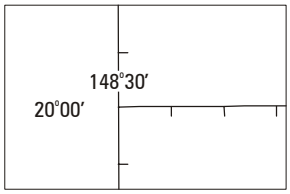
1:250 000 Scale

Graticule values will be shown outside the neatline for all lines and along selected lines internal to the map. The following rules expand on what is shown on the layout guides. Italicised examples relate to the Landscape layout guide.

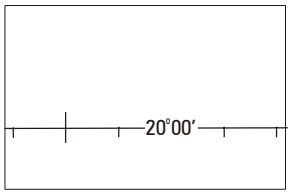
All values will be centred on the line to which they refer.

Whole degrees will always be shown in full (eg *149^{o}00'*).

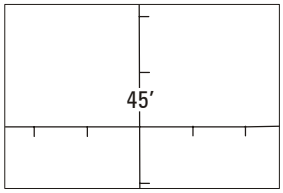
Graticule Values may be moved where they clash with other detail.



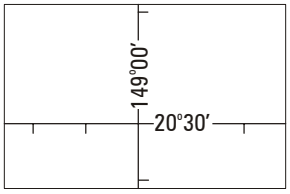
Values for the graticule lines forming the southern and western neatline of the map and for the graticule values on the graticule lines closest to the northern and eastern trim lines (eg *150°00'*) will always include the full degree and minute reference (eg: *148°30'*) .



Values along the southern neatline (*21°00'*) and along the latitude line closest to the northern trim (*20°00'*) will be centred at seven minutes east of the westernmost longitude line wholly within the map (eg *centred on 148°52'*) **note**: the neatline is not counted. Values will be added every thirty minutes going east. At the eastern edge of the map a value will only be added if the type will fall wholly within the trim line.



Other values falling outside the neatline and to the north of the graticule line closest to the northern trim line will be shown as minutes only (eg *15'*).



Intersections of graticule lines that are multiples of 30' and fall within the map excluding the bleed area, will be shown as full degree and minute references (eg: *20°30'*)

1:100 000 Scale

Refer to the 1:100 00 Scale Layout Guide for specific instructions for the placement of Graticule values.

8.3 Internal Grid Values

1:250 000 Scale

Ladder grid values will be shown in columns and rows as per the Layout Guides.

Grid Values may be displaced along the grid line or deleted if they clash with other map detail. Displacement will not be more than one grid square interval in either direction. Deletions will be kept to a minimum.

1:100 000 Scale

Refer to the 1:100 000 Scale Layout Guide for specific instructions for the placement of internal grid values.

8.4 Internal 100 000 Metre Square Identification Letters

At both 1:250 000 and 1:100 000 scales, internal blue 100 000 Metre Square Identification letters on grids may be moved for cartographic reasons where any identification letter clashes with a feature or the feature in turn clashes with identification letters. While it is determined such a move is required; the unaffected letters should be offset, where no further problems are caused, to effect a symmetrical presentation of the four letters.

Note: Identification letters are not to be shown outside the neatline (1:250 000 scale only). See the 1:100 000 Scale Layout Guide for treatment of these values at 1:100 000 scale.

9. Colours for Logos, Miscellaneous Marginalia and Bar code type

1:250 000 Scale

The vertical strip at the left hand edge of the map: solid reflex blue.

'Topographic Map .....' (text at the top of the cover): solid reflex blue.

Horizontal rules under headings: solid green PMS 347

GDA logo: Lines solid brown PMS 471

Text solid reflex blue

Colour control panels: half of each block solid and half 50% screen

The bar code number (beneath the bar code) will be in Zurich Condensed 10pt type. The bar code will be masked out 0.7 mm back from the text.

1:100 000 Scale

Refer to the 1:100 000 Scale Layout Guide for specific instructions for these marginalia elements.

10. Rules for map names and State names

10.1 Map Names

1:250 000 Scale

Map names will be given as in Appendix G.

Map names will not be hyphenated. With the exception of the word 'Special' the map name will be all in the same point size.

Type size:

Length of name in Times Bold Italic at 46 point (mm)	Size to be used (points)
<79	46
79 to <90	40
90 to <105	34

Note: All map names should be <105mm, if a longer name is found its treatment should be referred back to Geoscience Australia.

Multiple word names

'Special' will always be on a separate line in Times Bold Italic 30 point type, see Appendix B chapter 3 'Portrait layout'.

Multiple word names will be wrapped onto a second line before being reduced in point size. However, multiple word names will be reduced in point size to accommodate long individual words.

Placement of Text

Horizontal alignment: Text for the title (including 'Special' if applicable) and the state reference will start 20mm from the trim line.

Vertical alignment: One and two line names, the base of the first line will be 210 mm from the bottom trim. For specials the base of the 'Special' will be 10 mm from the bottom of the preceding line. See Appendix B chapters 2 and 3. For two line names which are not specials the base of the second line will be standard line spacing from the first line.

Three line names: Only specials will run to three lines. A name which is not a special and does not fit on two lines at 34 or 40 point size should be referred to Geoscience Australia. The top of the first line will be 228 mm from the bottom trim, the base of the second line will be standard line spacing from the first line and the base of the third line ('Special') will be 10mm from the bottom of the preceding line.

1:100 000 Scale

Refer to the 1:100 000 Scale Layout Guide for specific instructions on the rules for size and positioning of Map names at 1:100 000 scale

10.2 State names

1:250 000 Scale

Where the map sheet (including the bleed edges) falls wholly within one state or territory the state or territory name will be shown. Where the map sheet (including the bleed edges) depicts land from more than one state or territory the names of all states and territories will be shown.

State names will appear with the map name on the cover and at the lower right of the sheet (see Appendix B chapters 2 and 3).

The base of the State name will be 8mm from the base of the preceding line. The base of the second line of State names (if required) will be 6mm from the base of the first line.

1:100 000 Scale

Refer to the 1:100 000 Scale Layout Guide for specific instructions on the rules for positioning State names at 1:100 000 scale

11. Road Destination Arrows

1:250 000 Scale

Maximum distance from neatline: 8mm perpendicular to the neatline (Examples 1 and 5). Where this would result in an arrow greater than 20mm in length it is to be treated as an acute angle arrow.

Acute angle arrows: Maximum length of 20mm (Example 3).

Bent Arrows (where the direction to the destination does not allow the arrow to be shown as a straight line): A line, symbol number 42 will be drawn 45^{o} to the neatline out to 8mm perpendicular to the neatline. The second line, symbol 255, will be 10mm long drawn in the direction of the destination (Example 4).

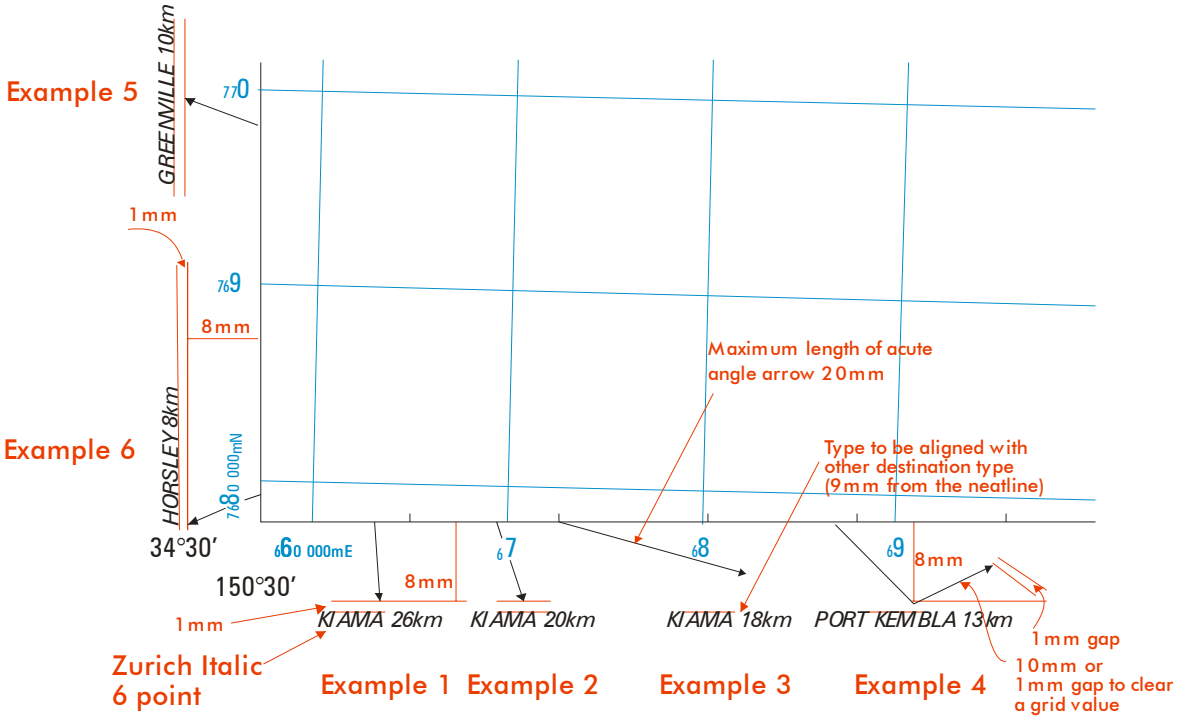
Text placement: 1mm gap from the arrow to the top or bottom of the type. For most cases type will be centred on the arrow head. However, for Example 4 it will be centred on the 'elbow'. Type may be moved off centre to avoid clashes.

Arrow clashes with grid value: The line will have a 0.2mm gap either side of the grid type (Examples 2 and 6).

Insufficient space between the road and the trim line: the road destination arrow and the text will be omitted.

Where the type or arrow unavoidably clashes with graticule values: See example 6 where the Graticule Value and destination type have been displaced to accommodate road destination type and the destination arrow.

1:250 000 scale examples:



1:100 000 Scale

Refer to the 1:100 000 Scale Layout Guide for specific instructions on the rules for positioning Road Destinations Arrows, Destination names and associated distances at 1:100 000 scale.

APPENDIX B
VERSION 3.6, Amendment 0
1 July 2004

Zurich 7 point Line Spacing 1.9 mm

Wording will change if the contour interval is varied
eg: Elevation in metres:
40 metres contour interval with selected 20 metre auxillary contours

See Annex A 'Magnetic Declination Diagram'

See Annex A 'Grid Reference'

See Annex K '100 000 metre Square Identification'

See Annex A 'Climate Graph'

BADGE: will be supplied

COPYRIGHT: Date will be supplied

Optima Italic 7 point Line Spacing 3 mm

HEADINGS: Optima Bold 12.5 point

IMAGERY: Date will be supplied

REVISION: Date will be supplied

HEADING RULINGS: Green PMS 347 Lineweight 0.4 mm

TEXT BLOCKS: Optima 9.5 point Line spacing 4 mm

Optima Italic 9.5 point

Optima Bold 10.5 point

BARCODE: Number will be supplied

Zurich Cn BT 10 point

Optima Bold 24 point

Optima Bold 12 point

Optima Bold 10 point Line Spacing 4.0 mm

REVISION: Date will be supplied

EDITION: Number will be supplied, Optima Bold 11 point

Optima (See 'Map Names on Cover' for size)

Optima Bold 13 point

See Annex A 'Map of Australia'

See Annex A 'Locality Diagram'

About this Map

Projection.....Map Grid of Australia (MGA94)
Universal Transverse Mercator on GRS80 ellipsoid
Horizontal Datum.....Geocentric Datum of Australia 1994 (GDA94) equivalent to WGS84
Vertical Datum.....Australian Height Datum (AHD)
Horizontal Accuracy.....+/- 50 metres
Vertical Accuracy.....+/- 10 metres
Elevations in metres; 20 metre contour interval

True North (TN), Grid North (GN) and Magnetic North (MN) are shown diagrammatically for the centre of the map

MN is correct for 1995 and moves easterly by 0.1° in about 4 years

Grid convergence 1.3°

Grid/Magnetic angle 11.4°

How to Quote a Grid Reference for a Particular Point

Blue numbers on the map grid lines are 1 000 metre intervals

Example: △CORDEAUX MTN

1. Quote this map.....Wollongong
2. Read letters identifying 100 000 metre square containing the point.....KH
3. Locate the vertical grid line to the left of the point.....93
4. Estimate tenths from the grid line to the point.....2
5. Locate the horizontal grid line below the point.....00
6. Estimate tenths from the grid line to the point.....4

Thus the reference for △CORDEAUX MTN is.....Wollongong KH932004

100 000 metre square identification

Grid zone 56H

Climatic Graph

Wollongong

mm 450 400 350 300 250 200 150 100 50 0

C° 50 40 30 20 10 0 -10

J F M A M J J A S O N D

Average temperature range
Average rainfall
Source: Australian Bureau of Meteorology

Australian Government
Geoscience Australia

Map Reliability

Topographic information checked from 2003 satellite imagery, and supplemented using other sources in 2004. This map was not field checked and some information may not be accurate.

About the NATMAP Series

There are over 3000 maps at 1:100 000 scale, of which some 1600 have been published. They are used by a wide range of professional and recreational users and are available both flat and folded. For more information contact Geoscience Australia.

Your Feedback is Welcome

If you discover errors or omissions on the map, please let us know via the map amendments page on our website, email; mapfeedback@ga.gov.au or send your annotated map to us. We will replace your map with the corresponding current edition. We value your assistance for the next edition.

Acknowledgments

Geoscience Australia gratefully acknowledges contributions to map content. Information is supplied by the Australian Government, State and local governments, private sector agencies and individuals. A comprehensive list is available from our website.

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Website: www.ga.gov.au

The Australian Government agency providing
SPATIAL INFORMATION FOR THE NATION

GDA

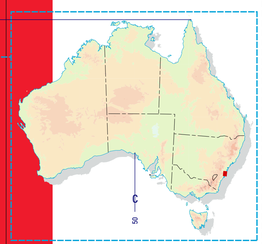
9 314231 097052

NATMAP 2004
TOPOGRAPHIC MAP
1: 100 000 SCALE (1cm to 1km)

9029 EDITION 2

Wollongong

NEW SOUTH WALES



COPYRIGHT date and GEOCAT number will be supplied with project file for each work unit

Zurich BT 8 point

NATMAP produced by Geoscience Australia
© Commonwealth of Australia 2004, GEOCAT 47024

An example of 100 000 metre Grid Square Identifier positioning of letters when the 100 000 metre grid zone boundary coincides with the map neatline

GB KG

Zurich Cn 6 point

KH LH Zurich Bold 12 point

Map overhang

6 FOLD / 7 FOLD LAYOUTS

The distance along a parallel of latitude decreases away from the equator. The width of the map detail decreases going south, hence the use of two layout sheets.
7 fold layout will suit maps north of 33°00'S.
6 fold layout will suit maps south of 33°00'S.
Trim sizes:
7 fold for maps north of 33°00' = 700 x 750mm.
6 fold for maps south of 33°00' = 600 x 750mm.

MAP WINDOW RELATIVE TO PAPER SIZE

Standard sheet extents:
30 minutes by 30 minutes plus approximately 200 metres map 'overhang' on the northern and eastern neatline. This 'overhang' is created by the change to GDA94.

Six fold maps:
The map will be positioned by the north-easterly corner and the central meridian will be aligned vertically on the sheet.
Distance from the northerly trim to the map 'overhang' will be 45mm.
Distance from the easterly trim to the map 'overhang' will be 14mm.

Seven fold maps:
The map, legend and scale bar will be centered within the six panels to the right of the cover. The central meridian of the map will be aligned vertically on the sheet.
Distance from the northerly trim to the map 'overhang' will be 45mm.

MAP NAMES ON COVER

Map names will not be hyphenated.
Map names are shown on Annex C Map Index.

Length of Name in Optima Bold at 46 point	Point Size	Example
< 79 mm	46pt	Nangabbitt
79 to 91 mm	40pt	Nangabbittaj
91 to 106 mm	34pt	Nangabbittajar
> 106 mm	30pt	Nangabbittajarra

Note: All map names should be <105mm. If a longer name is found its treatment should be referred to Geoscience Australia.

Multiple word names
Multiple word names: Wrap onto a second line before reducing in point size. Long single word names to be reduced in point size.

Placement of Text
Horizontal alignment: Text for the title and the state reference will start 20mm from the trim line.
Vertical alignment: One and two line names, the base of the first line will be 210mm from the bottom trim.

STATE NAMES: The base of the state name will be 8mm from the base of the preceding line. The base of the second line of state names (if required) will be 6mm from the base of the first line.
Where a map falls in more than one state or territory, the state which constitutes the largest portion of the map will take precedence eg:
QUEENSLAND
and NEW SOUTH WALES

SPECIAL MAP SHEETS

For those sheets specified in Appendix H with the term 'Special' appended to the name, the map name will include the word 'Special' in Optima Bold 30 point as shown below.
The sheet name and number will be that of the map area within which the greater part of the sheet lies.

Manypeaks
Special
WESTERN AUSTRALIA

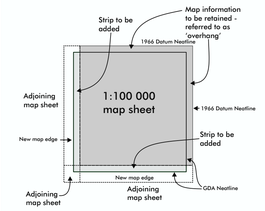
The map name in the Locality Diagram will include the word 'Special' in the same font and type size (ZC 8 pt) as the name and number.

The map names appearing on the south-east and north-east sheet edges will also include the word 'Special' in the same font and type size (Zurich Blk BT 14 pt) as the name and number.

MANYPEAKS SPECIAL 2528
WESTERN AUSTRALIA, EDITION 1

GEOCENTRIC DATUM SHIFT

Typically the shift is in the order of 200 metres in a north-easterly direction. This shift results in voids being created on the western and southern edges. To fill these voids, strips from adjoining map sheets are added to both edges of the map sheet. To assist the user to join maps without creating a gap to the north and east, the 1966 Datum sheet edge is retained as an overhang to the GDA Neatline. The overhang will be clipped to the 1966 Datum Neatline.
The grid and full graticule lines will extend into the overhang.



Refer to Annex G for technical specifications.

MAP GRID OF AUSTRALIA 1994 (MGA94)

Intervals: 1000 metre Universal Transverse Mercator on GRS80 ellipsoid
Lineweights: 10 000 metre grid lines 0.15mm
1000 metre grid lines 0.1mm
Colour: Process blue

Numbering external values:
Full coordinate values are to be shown on the first complete northing and easting grid lines nearest the south west (SW) corner. If the first full northing grid line is within 8.5mm of the southern neatline, the full coordinate value is to be positioned on the next northing grid line. External grid numbers which are multiples of five carry the prefix number designating the 100 000 metre unit.

Numbering internal values:
Two columns of ladder grid values are shown. One column is centred between the two easting gridlines nearest to one quarter of the east-west extent of the sheet, as measured from the centre of the west neatline. The other column is positioned similarly, as measured from the centre of the east neatline.
Two rows of ladder grid values are shown. One row is centred between the two northing grid lines nearest to one quarter of the north-south extent of the sheet, as measured from the centre of the north neatline. The other row is positioned similarly, as measured from the centre of the south neatline.
In areas of dense detail a ladder value may be displaced along the grid line or deleted if it impairs legibility. Displacement is not to be more than one grid square interval in either direction.
Deletions are to be kept to a minimum.

General Notes:
Should the grid and neatline coincide, the neatline takes precedence. Should a boundary and a neatline coincide, the boundary takes precedence.
Grid lines will not be broken.
The grid and graticule will be extended into the 'overhang' area.

100 000 Metre Grid Square Identifiers:
100 000 metre grid squares will be identified at the intersection of the 100 000 metre grid lines on the face of the map and outside the neatline where the 100 000 metre grid lines intersect the neatline.
On the face of the map a 2mm gap will be maintained between the grid square identifier and the 100 000 metre grid line.
Outside the neatline the grid square identifiers will be positioned to avoid other grid and graticule values and a 2mm gap will be maintained between the text and the extension of the 100 000 metre grid line.

EXAMPLE DEFAULT
Default position is longitude value positioned north of the intersection. Latitude value positioned east of the intersection.

Zurich Condensed 8 point

EXAMPLE DISPLACED VALUES
Values can be moved to avoid clashes. Longitude value positioned south of the intersection. Latitude value positioned east of the Intersection.

Zurich 12 point

Zurich Cn 9 point

GRATICULE

Neatline: Lineweight. 0.2mm.

Curvature:
East and west sheet edge neatlines are to be straight lines from sheet corner to sheet corner.
North and south sheet edge neatlines are to indicate curvature by drawing three straight sections of line joining each 10 minutes of longitude.

Internal Graticule Lines: Interval. 10 minutes.
Lineweight 0.2mm.

Numbering:
On the neatline, full degree and minute values are shown at the 30 minute corners. Between the corners, only the minute value is shown at every 5 minute interval on a standard map.
Within the map, full degree and minute values will be shown at the graticule intersections.
Where a geographical value coincides with a grid value, the geographical value is displaced.
Geographical values on the eastern neatline will be positioned so that there is always a minimum clearance of 1mm to the trim.

Minute Ticks:
Interval. One minute on internal graticule lines and neatline.
Lineweight. 0.2mm.
Ticks. One minute ticks are drawn on the eastern side of the line of longitude and the southern side of the line of latitude.
Every 5 minute tick will be 2mm on neatline and 4mm centred on internal graticule lines.

Colour: Process Black.

ROAD DESTINATION ARROWS

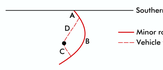
Only principal, secondary and selected minor roads will have kilometric distances indicated alongside the town destination at the neatline and placed to avoid ambiguity.

Choice of suitable roads and destinations
The selection should be based on a judgement of the most commonly used routes across the sheet. The selected roads will depend on the significance of the centres they connect within the context of the map and its surrounding area.

All the following guidelines should be taken into account:

Destinations and roads on the locality diagram should be given preference. However, the importance of any intervening destinations should be taken into account. For example, if going south there is a place on the locality diagram nearly a full map sheet away but another place of similar size is closer to the edge of the map sheet, choose the closer place.
The relationship of the destinations to the rest of the road network should be considered, for example, a destination with good connectivity is preferable to a destination with poor connectivity. Use the 1:2.5 million General Reference Map as a guide to what constitutes a significant destination.
Preference should be given to destinations on higher classification roads. For example, if there are only minor roads and vehicle tracks crossing the neatline, preferences should be given to destinations along the minor roads. In remote and isolated areas where only vehicle tracks cross the neatline, a destination to a homestead may be shown, particularly where the feature has a landing ground.
Destinations identified in the AAA maps as having petrol available should be given preference, again, this should be tempered by the relative location of possible choices.
Look at the surrounding map sheets to see how the distance and destination arrows should be applied. For example, what is the most direct route of the highest classification road? Generally, if there is a suitable place available, the destination should be on an adjacent map sheet. However, if there is no suitable destination on the adjacent sheet, destinations further away should be used. Judgement should be used as to whether such destinations are sufficiently important. The likelihood of travel on that particular route being one factor to be taken into account.
The destination shown may not necessarily be the first destination along the particular road. This is most likely to be an issue in the more densely settled areas. For example, where a locality place name or small populated place is the next destination but a short distance further on, there is a substantial town, then that town should be given as the destination.

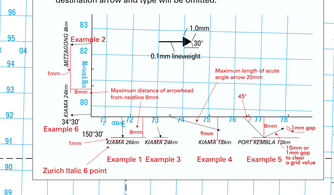
Distances
The distance given should usually be the most practicable route. This would usually be the shortest distance on the highest classification roads. For example, in the following case usually it would be preferable to use segments ABC:



However, in some circumstances A, D may be the most practicable route. Factors to be considered include, topography, the total length and likely levels of usage. Apply common sense.
Distances shown will be calculated and rounded to the nearest kilometre.

Arrows
In the northern and eastern map overhang the road destination arrows will commence at the end of the feature.
The arrow will point at the destination on the adjoining map. The distance will be measured to the nearest kilometre from the neatline of the map. The existence of destination arrows on adjoining sheets should be taken into consideration when placing destination arrows for the map.

Specifications
Maximum distance from neatline: 8mm (see examples 1 and 2).
Acute angle arrows: Maximum length of 20mm (see example 4).
Bent arrows (where the direction of the destination does not allow the arrow to be shown as a straight line): A line, drawn at 45° to the neatline out to 8mm perpendicular to the neatline; the second line, 10mm long in the direction of the destination (see example 5).
Arrow clash with grid value: Type may be moved off-centre. The line will have a minimal gap either side of the grid type (see example 3).
Destination type placement to arrow: 1mm gap to the top or bottom of the type. For most cases type will be centred on the arrow head. However, for example 5 it will be centred on the 'elbow' or, offset if there is a clash with a graticule value. See example 6 where the graticule value is displaced.
Type on the western neatline is positioned to read from the lower sheet edge to the top. Type on the eastern neatline is to read from the top sheet edge to the lower.
Arrow clash with a graticule value: Arrow will be omitted.
Insufficient space between the road and the neatline: The roads destination arrow and type will be omitted.



MAP TITLE (Top & Bottom Right Hand Corner)

State names: Where a map falls in more than one State or Territory, the State or Territory which constitutes the largest portion of the map will take precedence eg:
QUEENSLAND and NEW SOUTH WALES, EDITION 2

LOGO COLOUR SPECIFICATIONS

GDA
Brown PMS 471
Reflex Blue
Zurich Cn BT Bold Italic

Logos will be supplied in digital format.

Zurich BT 10.5 point
Zurich BT 6.5 point
Optima Bold 12.5 point
Green PMS 347 Lineweight 0.4mm
Optima 8.5 point
Zurich 7 point
Optima 8.5 point Line Spacing 6.3 mm

SCALE 1:100 000

Kilometres 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 Kilometres

0.2mm lineweight

Legend

Dual carriageway; Distance in kilometres ..... sealed / unsealed
Principal road; Locality; Built-up area .....
Secondary road; Bridge; Causeway .....
Minor road (access & condition not assured) .....
Vehicle track (access & condition not assured) .....
Route marker: National, State .....
Gate; Stock grid .....
Embankment; Cutting .....
Landing ground; Airport; Heliport .....
Multiple track railway; Station or siding .....
Single track railway; Bridge; Tunnel .....

Powerline .....
Homestead; Building(s); Ruin .....
Fence; Levee; Open cut mine .....
Mine; Windpump; Yard .....
Contour with value; Depression contour .....
Horizontal control point; Spot elevation .....
Sand; Sand dunes .....
Sand ridges; Pinnacle; Cliff .....
Orchard or vineyard; Windbreak .....
Rainforest; Urban recreation parkland .....
Plantation: Hardwood, Softwood .....
Forest, wood or shrubland: Sparse, Dense, Closed .....

Optima 8.5 point Line Spacing 6 mm

Bore or well; Spring; Tank or small dam .....
Watercourse (presence of water not implied) .....
Subject to inundation; Swamp .....
Lake: Perennial, Non-perennial; Waterhole .....
Wreck: Submerged, bare or awash .....
Foreshore flat; Lighthouse .....
Shoal; Tidal ledge or reef; Mangrove .....
Rock: Submerged, bare or awash; Breakwater .....
Jetty or pier; Wharf; Saline coastal flat .....
State or Territory border .....
Reserved area boundary .....
Prohibited area boundary .....

Optima 8.5 point Line Spacing 6 mm

Zurich Cn BT 6 point Process Black

Zurich Cn BT 6 point & 9 point Process Blue

Zurich Cn BT 8 point Process Black

An example of 100 000 metre Grid Square Identifier positioning of letters when the 100 000 metre grid zone boundary coincides with the map neatline

1966 Datum Neatline Lineweight 0.10mm Black

Colours are printed representations. Actual map printing colours may be different than shown here.

WOLLONGONG
9029
NEW SOUTH WALES, EDITION 2

Zurich Extra Bold 14 point
Zurich Bold 10 point
Zurich Extra Bold 14 point
Zurich Bold 10 point

6 Fold Map
(map sheets **south** of 33°S)

7 Fold Map
(map sheets **north** of 33°S)

APPENDIX B
VERSION 3.6, Amendment 0
1 July 2004

The North East extents of the map will be coincident with the top right corner trim lines (for this example these are 19°57′, 150°05′).
The north south line that runs through the centre of the graticule should be aligned vertically on the sheet.

BADGE: will be supplied

COPYRIGHT: Date will be supplied
Times Italic 7 point Line Spacing 2.8mm

HEADINGS: Times Bold Italic 12.5 point

IMAGERY: Date will be supplied
REVISION: Date will be supplied

HEADING RULINGS: Green PMS 347 Lineweight 0.4 mm

TEXT BLOCKS: Times Italic 9.5 point Line spacing 3.7mm

Times Italic 9.5 point
Optima Bold 10 point

REVISION: Date will be supplied
Zurich Condensed 10 point
Zurich Extra Bold 10 point
Zurich Bold 10 point Line Spacing 1.5 mm

Zurich Extra Bold 20 point
Times Bold Italic 46 point
Times Bold Italic 13 point

Zurich Condensed 8 point
(Sheet name and numbers)

Australian Government
Geoscience Australia

Map Reliability
Topographic information checked from (2003) satellite imagery, and supplemented using other sources (at 2004).
This map was not field checked and some information may not be accurate.

About the NATMAP Series
Geoscience Australia produces over 500 maps at 1:250 000 scale in this NATMAP series which covers Australia. They are used by professional and recreational users and are available both flat and folded. A corresponding data product, GEODATA TOPO-250K is also available.

Your Feedback is Welcome
If you discover errors or omissions on the map, please let us know via the map amendments page on our web site or send your annotated map to us. We will replace your map with the corresponding current edition.
We value your assistance for the next edition.
e-mail: mapfeedback@ga.gov.au

Acknowledgments
Geoscience Australia gratefully acknowledges contributions to map content. Information is supplied by the Australian Government, State and local governments, private sector agencies and individuals. A comprehensive list is available from our web site.

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NATMAP Freecall: 1800 800 173
Web: www.ga.gov.au

The Australian Government agency providing
SPATIAL INFORMATION FOR THE NATION

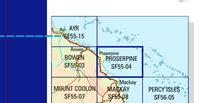
9 314231 154233

SG56-15 EDITION 1

NATMAP **2004**
TOPOGRAPHIC MAP
1:250 000 SCALE (1cm to 2.5km)

Zurich Bold 12 point

Proserpine
QUEENSLAND



GDA

About this Map
Projection.....Map Grid of Australia 1994 (MGA94)
Universal Transverse Mercator on GRS80 ellipsoid
Horizontal Datum.....Geocentric Datum of Australia 1994 (GDA94)
equivalent to WGS84
Vertical Datum.....Australian Height Datum (AHD)
Horizontal Accuracy.....+/- 140 metres
Vertical Accuracy.....+/- 25 metres
Elevations in metres; 50 metre contour interval

True North (TN), Grid North (GN) and Magnetic North (MN) are shown diagrammatically for the centre of the map

MN is correct for 2002 and moves easterly by 0.1′ in about 4 years

Grid convergence 1.4°
Grid/Magnetic angle 1.4°

How to Quote a Grid Reference for a Particular Point
Blue numbers on the map grid lines are 10 000 metre intervals
Example: *e.g. MT STOCKDALE*
1. Quote this map.....Proserpine
2. Read letters identifying 100 000 metre square containing the point..... FT
3. Locate the vertical grid line to the left of the point and read large number on the grid line..... 8
4. Estimate tenths from the grid line to the point..... 7
5. Locate the horizontal grid line below the point and read large number on the grid line..... 14
6. Estimate tenths from the grid line to the point..... 2

Thus the reference for *e.g. MT STOCKDALE* is.....Proserpine FT8720

100 000 metre square identification

FT GT HT JC
FS GS HS JB

Grid zones 55K and 56K

Climatic Graph
Proserpine (estimated)

Average temperature range
Average rainfall
Source: Australian Bureau of Meteorology

Legend
Dual carriageway; Distance in kilometres
Principal road; Locality; Built-up area
Secondary road; Bridge; Causeway
Minor road (access & condition not assured)
Vehicle track (access & condition not assured)
Route marker: National, State
Gate; Stock grid
Embankment; Cutting
Landing ground; Airport; Heliport
Multiple track railway; Station or siding
Single track railway; Bridge; Tunnel
Powerline (110 kV and over)
Homestead; Building/s; Ruin
Fence; Levee; Open cut mine
Mine; Windpump; Yard
Contour with value; Depression contour
Horizontal control point; Spot elevation
Sand; Sand dunes
Sand ridges; Pinnacle; Cliff
Forest, wood or shrub land; Rainforest
Plantation; Urban recreation parkland
Orchard or vineyard; Windbreak
Bore or well; Spring; Tank or small dam
Watercourse (presence of water not implied)
Subject to inundation; Swamp
Lake: Perennial, Non-perennial; Waterhole
Wreck: Submerged, bare or awash
Foreshore flat; Lighthouse
Shoal; Tidal ledge or reef; Mangrove
Rock: Submerged, bare or awash; Breakwater
Jetty or pier; Wharf; Saline coastal flat
State or Territory border
Reserved area boundary
Prohibited area boundary

Zurich Condensed 8 point
Zurich Condensed 9 point
Zurich 8 point. Line Spacing 3 mm
Zurich 8 point. Line Spacing 3.5 mm
Zurich Condensed 7 point
Zurich Condensed 6 point Line Spacing 2.5 mm
Zurich 8 point
Zurich 8 point Line Spacing 4.0 mm
Zurich 6 point
Bounding rectangle in alignment with marginalia panel
4 (from bottom of box to top of text)
Zurich 8 point Line Spacing 4.0 mm
Centrelines for the position for two Climatic Graphs
Zurich Bold Italic 8 point
Zurich Bold Italic 6 point
Note: 'Iestimated)' will only appear on those maps where the station is identified as estimated on the project instruction.
Zurich 7 point
Zurich 7 point
Zurich 6 point
Zurich 8 point Line Spacing 6 mm
Zurich 7 point
Zurich 6.5 point
Zurich Condensed 8 point
Zurich Condensed 5 point
Zurich Condensed 8 point
Zurich 6.5 point
Zurich Bold 12 point — FT GT FS GS
2.4 mm (Distance offset measured from left alignment of large type)
Zurich Condensed 8 point
(Value centred on 7th tick See Appendix B chapter 8.2)
Zurich Condensed 9 point
Zurich 10.5 point
Zurich 6.5 point
SCALE 1:250 000
Line weight 0.2mm
Zurich Condensed 7 point
Zurich Extra Bold 14 point
Zurich Bold 10 point
PROSERPINE SF55-04
QUEENSLAND, EDITION 1

NATMAP produced by Geoscience Australia
© Commonwealth of Australia 2004, GEOCAT 25242
(Align Production Note with western graticule)
Zurich 8 point. Line Spacing 4mm
GEOCAT number will be supplied.

Colours are printed representations (actual map printing colours may be different than shown here).

For Your Notes

Australian Government
Geoscience Australia

Map Reliability

Topographic information checked from 2003 satellite imagery, and supplemented using other sources in 2004.
This map was not field checked and some information may not be accurate.

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e-mail: mapfeedback@ga.gov.au

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Web: www.ga.gov.au

The Australian Government agency providing
SPATIAL INFORMATION FOR THE NATION

9 314231 184233

NATMAP
TOPOGRAPHIC MAP
1:250 000 SCALE (1cm to 2.5km)
SG56-15 EDITION 1
2003

Brisbane
Special

QUEENSLAND and NEW SOUTH WALES

About this Map

Projection.....Map Grid of Australia 1994 (MGA94)
Universal Transverse Mercator on GRS80 ellipsoid
Horizontal Datum.....Geocentric Datum of Australia 1994 (GDA94)
equivalent to WGS84
Vertical Datum.....Australian Height Datum (AHD)
Horizontal Accuracy.....+/- 140 metres
Vertical Accuracy.....+/- 25 metres
Elevations in metres; 50 metre contour interval

True North (TN), Grid North (GN) and Magnetic North (MN) are shown diagrammatically for the centre of the map

MN is correct for 2002 and moves easterly by 0.1' in about 4 years

Grid convergence 1.4' E
Grid/Magnetic angle 1.4' E

How to Quote a Grid Reference for a Particular Point

Blue numbers on the map grid lines are 10 000 metre intervals

Example: ▪ WT COTTON
1. Quote this map.....Brisbane Special
2. Read letters identifying 100 000 metre square containing the point..... NQ
3. Locate the vertical grid line to the left of the point and read large number on the grid line..... 2
4. Estimate tenths from the grid line to the point..... 2
5. Locate the horizontal grid line below the point and read large number on the grid line..... 4
6. Estimate tenths from the grid line to the point..... 5
Thus the reference for ▪ WT COTTON
is.....Brisbane Special NQ2245

100 000 metre square identification

MR	NR	PR
MQ	NQ	PQ
MP	NP	PP

Grid zone 56J

Climatic Graph

Brisbane — *Woorim (estimated)*

	J	F	M	A	M	J	J	A	S	O	N	D
°C	29	29	27	24	21	18	17	18	20	23	25	27
mm	150	170	130	90	80	70	60	60	70	100	120	140

Average temperature range
Average rainfall
Source: Australian Bureau of Meteorology

Legend

Dual carriageway; Distance in kilometres ..... 23 (sealed / unsealed)
Principal road; Locality; Built-up area .....
Secondary road; Bridge; Causeway .....
Minor road (access & condition not assured) .....
Vehicle track (access & condition not assured) .....
Route marker: National, State ..... 1 / A120
Gate; Stock grid .....
Embankment; Cutting .....
Landing ground; Airport; Heliport .....
Multiple track railway; Station or siding .....
Single track railway; Bridge; Tunnel .....
Powerline (110 kV and over).....
Homestead; Building/s; Ruin .....
Fence; Levee; Open cut mine .....
Mine; Windpump; Yard .....
Contour with value; Depression contour .....
Horizontal control point; Spot elevation 804
Sand; Sand dunes .....
Sand ridges; Pinnacle; Cliff .....
Forest, wood or shrub land; Rainforest .....
Plantation; Urban recreation parkland .....
Orchard or vineyard; Windbreak .....
Bore or well; Spring; Tank or small dam .....
Watercourse (presence of water not implied) .....
Subject to inundation; Swamp .....
Lake: Perennial, Non-perennial; Waterhole .....
Wreck: Submerged, bare or awash .....
Foreshore flat; Lighthouse .....
Shoal; Tidal ledge or reef; Mangrove .....
Rock: Submerged, bare or awash; Breakwater .....
Jetty or pier; Wharf; Saline coastal flat .....
State or Territory border .....
Reserved area boundary .....
Prohibited area boundary .....

NATMAP produced by Geoscience Australia

(Align Production Note with western graticule)

SCALE 1:250 000
Kilometres 0 5 10 12.5 15 20 25 30 35 40 45 50 Kilometres

BRISBANE SPECIAL
SG56-15
QUEENSLAND and NEW SOUTH WALES, EDITION 1

The North East extents of map will be coincident with the top right corner trim lines and the centre of the graticule will be vertical on the sheet.

MR NR
MQ NQ
NR PR
NQ PQ
MQ NQ
MP NP
NQ PQ
NP PP

Bounding rectangle in alignment with marginalia panel

(from bottom of box to top of text)

Note: 'estimated' will only appear on those maps where the station is identified as estimated on the project instruction.

(Distance offset measured from left alignment of large type)

(Value centred on 7th tick See Appendix B chapter 8.2)

BADGE: will be supplied

COPYRIGHT: Date will be supplied
Times Italic 7 point Line Spacing 2.8mm

HEADINGS: Times Bold Italic 12.5 point

IMAGERY: Date will be supplied
REVISION: Date will be supplied

HEADING RULINGS: Green PMS 347 Lineweight 0.4 mm

TEXT BLOCKS: Times Italic 9.5 point Line spacing 3.7mm

Times Italic 9.5 point
Optima Bold 10 point

REVISION: Date will be supplied

Zurich Condensed 10 point

Zurich Extra Bold 10 point

Zurich Bold 10 point Line Spacing 1.5 mm

Zurich Bold 12 point

Zurich Extra Bold 20 point

Times Bold Italic 46 point

Times Bold Italic 30 point

Times Bold Italic 13 point

Zurich Condensed 8 point
(Sheet name and numbers)

Zurich 8 point. Line Spacing 3 mm

Zurich 8 point. Line Spacing 3.5 mm

Zurich Condensed 7 point

Zurich Condensed 6 point Line Spacing 2.5 mm

Zurich 8 point

Zurich 8 point Line Spacing 4.0 mm

Zurich 6 point

Zurich 8 point Line Spacing 4.0 mm

Zurich Bold Italic 8 point

Zurich Bold Italic 6 point

Zurich 7 point

Zurich 7 point

Zurich 6 point

Zurich 8 point Line Spacing 6 mm

Zurich 7 point

Zurich 6.5 point

Zurich Condensed 8 point

Zurich Condensed 8 point

Zurich Condensed 5 point

Zurich 6.5 point

Zurich Condensed 8 point

Zurich 8 point. Line Spacing 4mm

GEOCAT number will be supplied.

Zurich 10.5 point

Zurich 6.5 point

Line weight 0.2mm

Zurich Condensed 9 point

Zurich Extra Bold 14 point

Zurich Bold 10 point

Colours are printed representations (actual map printing colours may be different than shown here).

Appendix C

Fence and Water Facilities Guide

BACKGROUND

This guide was derived from:

- A series of thematic maps including *Wheat Cropping Areas in Australia, Land use, Size of Farms, and Rainfall* supplied in the Atlas of Australia series produced by AUSLIG (which was used to form the original Appendix C, the predecessor of this guide)
- Additional thematic maps at various scales (including *land use, population density & rainfall*)
- Previous 250K and 100K topographic mapping
- Consultation with users of recently published 250K NATMAP topographic maps.

In predominantly wet and/or heavily developed regions, fences and water facilities such as mills, tanks and bores proliferate and therefore lose their significance as a feature and need not be shown. However, vermin proof fences and dog fences will all be shown even in the areas marked as 'no fences'.

In particular, the following features were not captured in the more densely settled and/or predominantly wet areas of Australia:

- bores
- fences
- gates
- homesteads
- names of minor roads
- springs
- stock grids
- water tanks
- water points
- wind pumps
- yards

REGION DESCRIPTIONS

Australia has now been divided into 3 settlement/climatic area types. These are:

- Densely settled (urban)
- Moderately settled (agricultural)
- Sparsely settled (pastoral/wilderness)

Densely settled

This region comprises major urban areas, mostly in higher rainfall zones and having high population densities. Features such as waterpoints (bores, springs, dams, wind pumps etc), fences, homesteads and named minor roads are not significant landmark features. The features listed above will not be shown, unless a significant feature is identified. For example, a homestead, such as Elizabeth Farm outside Sydney, which does has significant historical value and should be named.

Features to be shown:

None of the specified items will be shown, unless advised to by Geoscience Australia. However, if during production a possible significant feature is identified an Action Request should be directed to Geoscience Australia seeking clarification.

Moderately settled

This comprises the agricultural (cropping/grazing) areas between the coast and the sparsely settled interior or wilderness areas. Most areas are subject to moderate rainfall and moderate population densities. The majority of the population live in cities and towns, therefore homesteads are a

significant feature. Other features such as waterpoints (bores, springs, dams, wind pumps etc), vermin proof fences and named minor roads are also significant. However, as 250K topographic generalisation rules prohibit showing all these features, only a selection will be shown, with preference given to homesteads.

Features to be shown:

Capture a selection of these features in the following priority order:

First Priority
- named homesteads – with emphasis on larger homesteads
  (these may be differentiated from smaller homesteads by reviewing imagery to identify infrastructure, such as buildings)
- vermin proof fences

Second Priority
- names of some minor roads

Third Priority
- wind pumps
- bores, springs, waterpoints, water tanks

These features are not to be captured:
- yards
- non-vermin proof fences
- gates
- stock grids

Note: During the capture process producers should adhere to the rules of cartographic generalisation. If 'clutter' becomes an issue, do not capture hydrology point features or minor road names.

Note: New named homesteads may previously have been captured as part of 1:250 000 Series 2 as buildings.

Sparsely settled

This comprises the arid pastoral land of central Australia with very low populations – mostly located in small settlements and homesteads. It also includes areas where no/little pastoral activity occurs (eg deserts, conservation reserves and state forests). In this region all features are significant landmark features – especially homesteads. All features will be shown. Where 250K topographic generalisation rules prohibit showing all features, preference will be given to remote settlements and homesteads, then waterpoints.

Features to be shown:

Capture all of these features in the following priority order:
- small settlements, such as Indigenous communities
- homesteads
- vermin proof fences
- names of minor roads & vehicle tracks
- windpumps
- non-vermin proof fences
- bores, springs, waterpoints, water tanks
- gates
- stock grids
- yards

Note: During the capture process producers should adhere to the rules of cartographic generalisation. If 'clutter' becomes an issue, do not capture hydrology point features or minor road names.

Note: New named homesteads may previously have been captured as part of 1:250 000 Series 2 as buildings.

Source Material

For information about acceptable source material to be used for the feature capture please refer to the NMD Guidelines on Using National Mapping Supplied Material and in the individual Work Unit Production Files.

Background, Use & Supply of the Digital Guide

Coverage description:

The digital data was sourced from the seamless database, and GEODATA Series 2 data.

The database shows Australia divided up into the 3 different region types in the form of polygons. The polygons are bound by the coastline on the external perimeter, and by various selected arc features inland. Whilst roads were the preference, other features such as vegetation arcs, drainage and waterbody arcs, powerlines and reserve boundaries, railways etc have also been used.

The feature arcs that form the region boundary have retained their attributes to assist producers in determining which feature has been used

Where a suitable feature did not exist in the source data, a new artificial feature was created in this database to close the polygon. This feature is called a 'joiner'. It was placed with logical connectivity to existing features, so that it was obvious as to its intended position (eg an extension to a road, or across the mouth of a river etc).

Where a feature used to delineate a region boundary has since been altered by the producer in the process of revision, the region boundary will be deemed to move with that feature. A likely example would be a builtup area boundary or a vegetation boundary.

Polygon Attribute Item Definition:

REGION [10,10 C]: Descriptive of Region Type
dense
moderate
sparse

Arc Attribute Item Definition:

FEAT_CODE [12,12,C]: Relates to the Specification Feature Classes
Various Standard Feat_codes
Joiner – representing an indicative line
NAME [50,50,C]: Name of Feature, if available.
CLASS [1,1,I] : Classification of road feature, if appropriate.
FORMATION [1,1,I] : Formation of road feature, if appropriate.
NRN [12,12,C]: National Route Number of road feature, if appropriate.
SRN [12,12,C]: State Route Number of road feature, if appropriate.

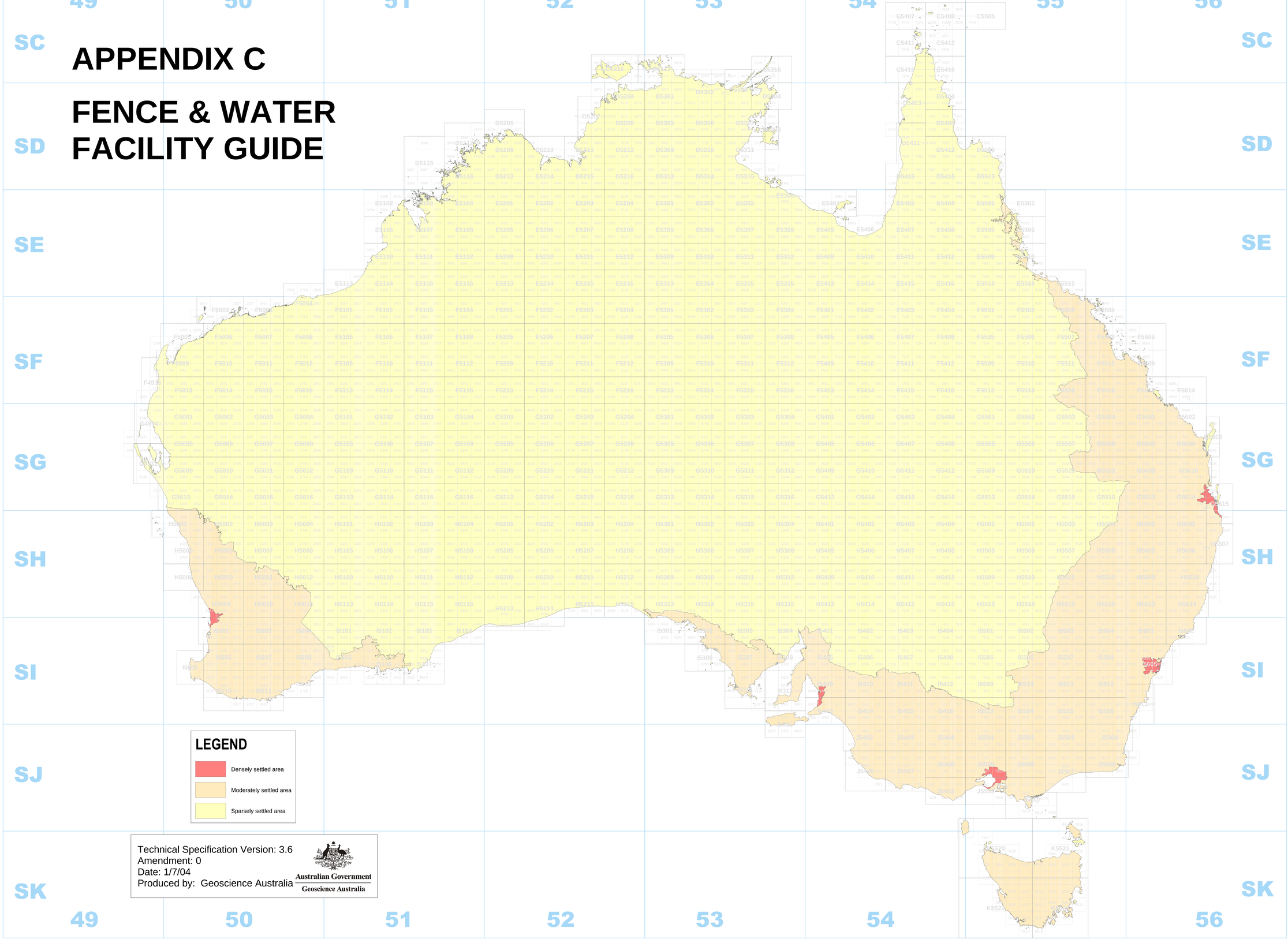
TEXT_NOTE [30,30,C]: Descriptive note of feature, if appropriate.

Supply:

The Appendix C guide is supplied in both a PDF and an ARC INFO uncompressed export file (Geographics GDA94) format, with the release of each specification version. Updates may be supplied with an amendment, if appropriate.

APPENDIX C

FENCE & WATER FACILITY GUIDE



Technical Specification Version: 3.6
Amendment: 0
Date: 1/7/04
Produced by: Geoscience Australia

Australian Government
Geoscience Australia

Appendix D - Inland Water Features Guide

Background, Description & Supply of the Digital Inland Water Features Guide

Background:

This guide originates from a guide produced by geographers in AUSLIG for inclusion in the SYMBAS 1988 Specifications, produced by the Royal Australian Survey Corps. The guide remains relevant and is the best available for the classification of inland water features. The major modification from the original guide is the combination of the intermittent and mainly dry water classifications into a non-perennial classification. This guide shows major watercourses only. Watercourses not shown on this guide will be classified as minor non-perennial except tidal watercourses in areas of mangrove which are always to be shown as perennial.

Coverage description:

Arc Attribute Item Definition:

CODE [10,10,C]: Relates to the Hierarchy and perenniality of rivers and the perenniality of Lake features.

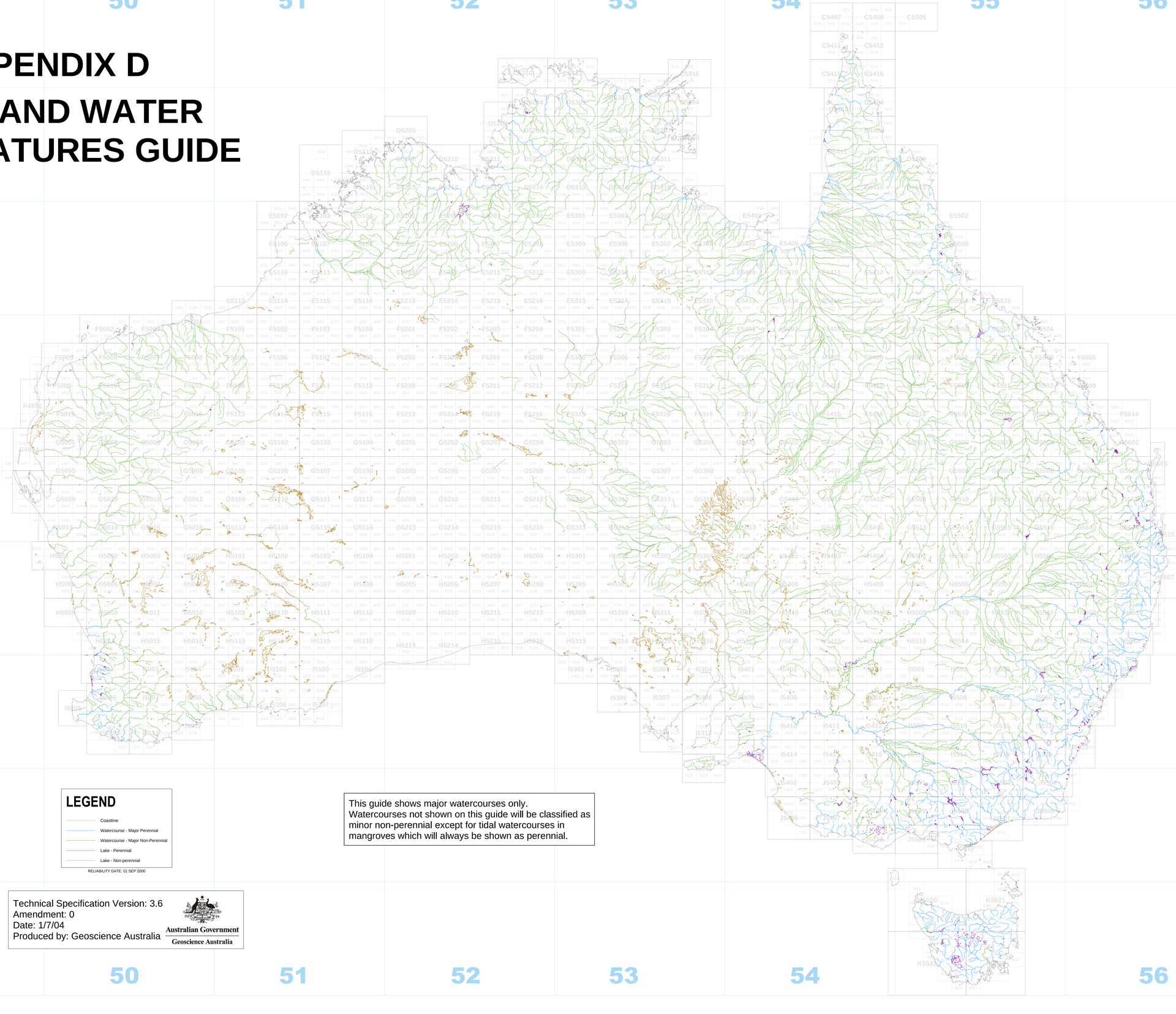
Coast – *Indicates a representation of the coastline. This data should not take precedence over existing coastline definition in base data or base mapping.*
Lakenonp – *Indicates Non-perennial Lake features.*
Lakeper – *Indicates Perennial Lake features.*
Rivernonp – *Indicates Major Non-perennial river/watercourse features*
Riverper – *Indicates Major Perennial river/watercourse features*

Supply:

The Appendix D guide is supplied in both a PDF and an ARC INFO uncompressed export file (Geographics GDA94) format, with the release of each specification version. Updates may be supplied with an amendment, if appropriate. Note: The Appendix D ArcInfo guide does not follow standard naming convention, rather it is titled aus_wfg_0900. However, the pdf of the digital guide is still titled AppendixD.pdf .

APPENDIX D

INLAND WATER FEATURES GUIDE



LEGEND

- Coastline
- Watercourse - Major Perennial
- Watercourse - Major Non-Perennial
- Lake - Perennial
- Lake - Non-perennial

RELIABILITY DATE: 01 SEP 2000

This guide shows major watercourses only.
Watercourses not shown on this guide will be classified as minor non-perennial except for tidal watercourses in mangroves which will always be shown as perennial.

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Amendment: 0
Date: 1/7/04
Produced by: Geoscience Australia

Australian Government
Geoscience Australia

Appendix E - Limits of Oceans and Seas

Background, Description & Supply of the Digital Limits of Oceans and Seas Guide

Background:

Information on this guide has been supplied by the Australian Hydrographic Office, Royal Australian Navy, Wollongong NSW. The guide shows Australia and Adjacent Waters with Limits of Oceans and Seas. Boundaries shown on this guide are to be used as an aid to Ocean and Sea name placement only; no authority for legal or political boundaries is implied.

Note: the 'other waters' category is not comprehensive and does not imply other large water bodies such as Spencer Gulf should be unnamed.

See also Section 1 chapter 3.9.1 and Appendix A, Feature Class Dictionary; Junction and Sea.

Coverage description:

The digital data was sourced from the 250k Topographic Seamless Geodatabase, and information from the Australian Hydrographic Office.

Please Note: One Polygon may have the name field populated in all three categories of Ocean, sea and Other waters.

Polygon Attribute Item Definition:

FEAT_CODE [12,12,C]	: Definition of island, mainland and water
OCEAN_NAME [50,50,C]	: Ocean name of represented area
SEA_NAME [50,50,C]	: Sea name of represented area
OTHER_WATER_NAME [50,50,C]	: Other waters name of represented area
STATE [1,1,I]	: Related to state codes (as in specifications Appendix A Island)
ISLAND_NAME [50,50,C]	: Island name of represented area (to be used only to assist locational placement)

Arc Attribute Item Definition:

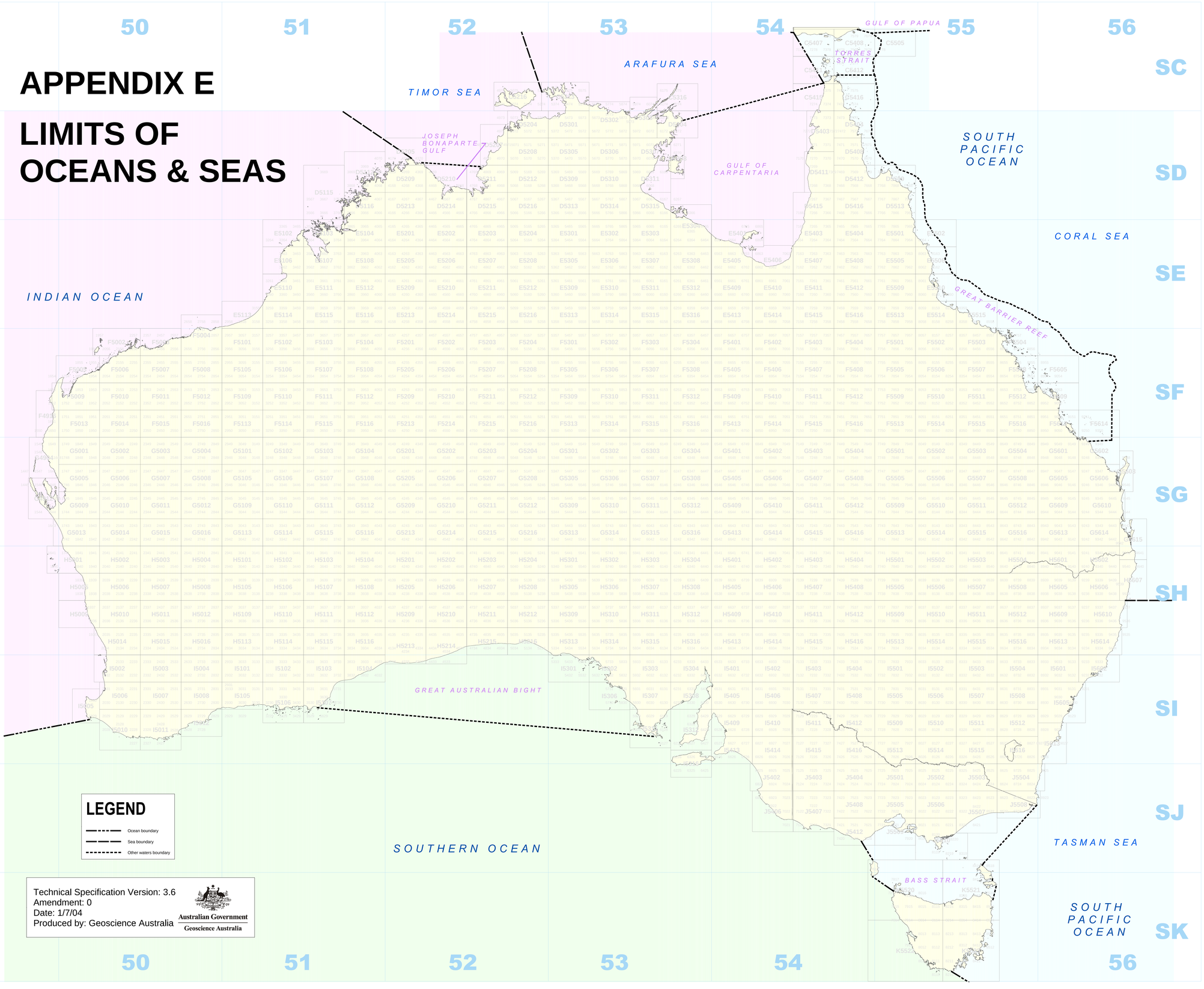
BOUNDARY [25,25,C]	:Type of boundary feature (e.g. limit of data, sea boundary,etc)

Supply:

The Appendix E guide is supplied in both a PDF and an ARC INFO uncompressed export file (Geographics GDA94) format, with the release of each specification version. Updates may be supplied with an amendment, if appropriate.

APPENDIX E

LIMITS OF OCEANS & SEAS



Appendix F - Limits of Large Area Features

Background, Description & Supply of the Digital Limits of Large Area Features Guide

Background:

Boundaries were derived from interpretation of maps, reference texts and other material from a variety of authoritative sources on themes such as terrain, climate and vegetation. The coastline was extracted from the 250K Topographic Seamless Geodatabase.

The authority for desert names is the Geographical Names Board in the State concerned. Other names may not be approved names.

This guide is only to be used as an aid for placement of names and does not imply that other large area features should not be named.

Coverage description:

Polygon Attribute Item Definition:

FEAT_CODE [12,12,C]: Feature coding of either mainland, island or large area
NAME [50,50,C]: Name of Large Area Feature, if available.

Arc Attribute Item Definition:

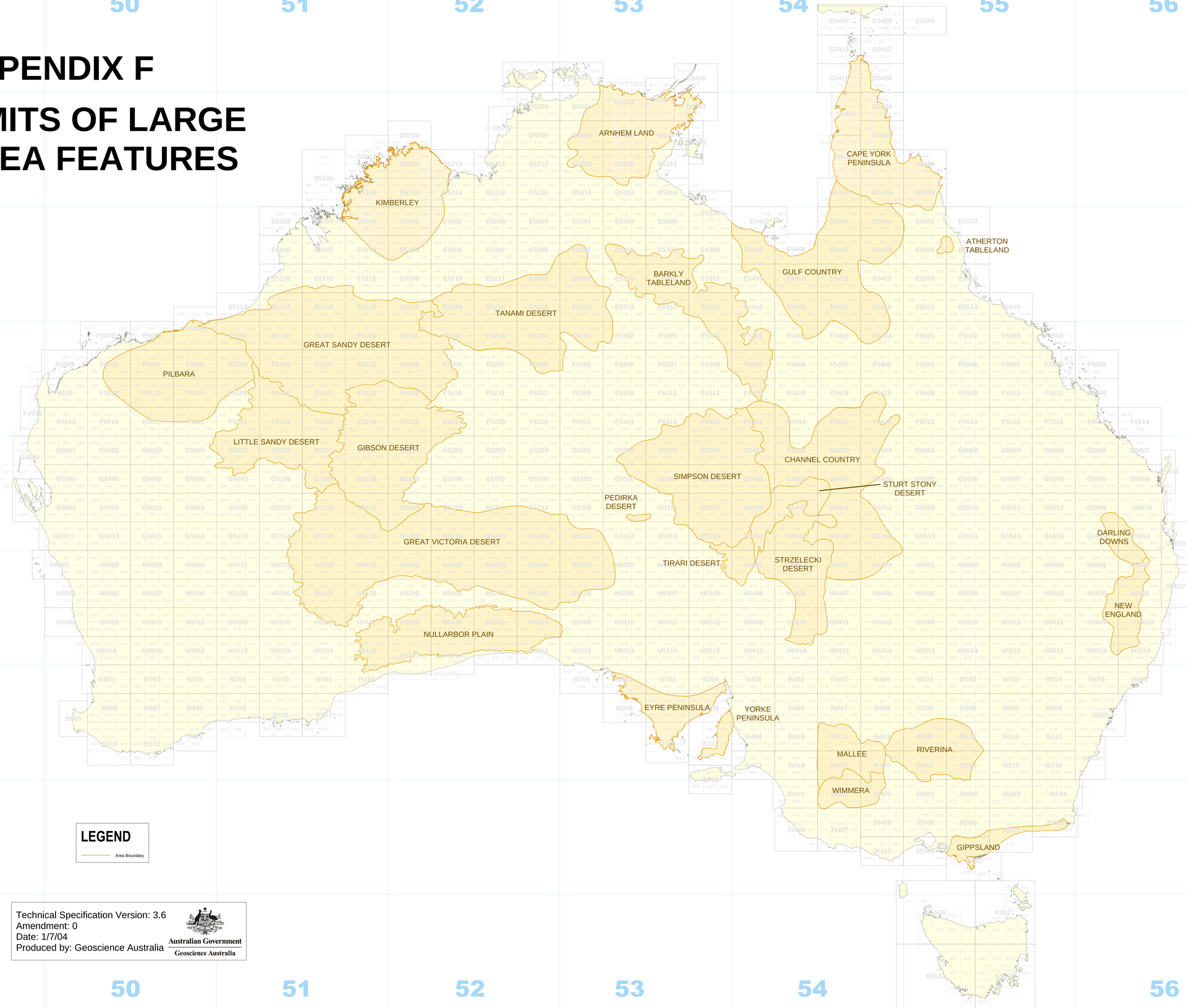
FEAT_CODE [12,12,C]: Relates to the Specification Feature Classes
Various Standard Feat_codes
Area_bdy – representing an indicative line around large area features

Supply:

The Appendix F guide is supplied in both a PDF and an ARC INFO uncompressed export file (Geographics GDA94) format, with the release of each specification version. Updates may be supplied with an amendment, if appropriate.

APPENDIX F

LIMITS OF LARGE AREA FEATURES



LEGEND

Area Boundary

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Produced by: Geoscience Australia

Australian Government
Geoscience Australia

Appendix G

1:250 000 & 1:100 000 NTMS Map Indexes

1:250 000 Map Index

This map index shows the sheet names and numbers for 1:250 000 maps. Map boundaries do not include the bleed edges. Boundaries of adjusted sheets are shown, and for clarity where adjusted sheets overlap other maps the boundary, name and number are shown in red.

This index should be read in conjunction with Appendix H which describes the types of extents for the GEODATA tiles, maps and the working data base, together with the physical geographical extents of adjusted (extended) tiles ie. data and map extents.

1:100 000 Map Index

This map index shows the sheet names and numbers for 1:100 000 maps. Map boundaries do not include the small extension to allow for the datum shift. Boundaries of adjusted sheets are shown, and for clarity where adjusted sheets overlap other maps the boundary, name and number are shown in red.

This index should be read in conjunction with Appendix H which describes the types of extents for the GEODATA tiles, maps and the working data base, together with the physical geographical extents of adjusted (extended) maps.

The 1:250 000 and 1:100 000 scale map indexes are provided in PDF format with each Specification Version release.

NATMAP Map Index
1:100 000 scale

Topographic Map Sheets

1:100 000 scale published topographic map - special
These maps have been designed to provide the user with greater map area coverage.

1:100 000 scale published topographic map

1:100 000 scale unpublished topographic map
Plain paper copies of unpublished maps are available from Geoscience Australia. These comprise the original plotted information from aerial photography and are available in areas where the 1:100 000 scale maps have not been completed into published form. In NSW, the 1:100 000 scale maps not published by Geoscience Australia are available from Land and Property Information - www.lpi.nsw.gov.au

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Version 3.6 - Amendment 0
1 July 2004

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NATMAP Map Index
1:250 000 scale

49 114° 50 120° 51 126° 52 132° 53 138° 54 144° 55 150° 56

SC SD 12° 16° SE 20° SF 24° SG 28° SH 32° SI 36° SJ 40° SK

ARAFURA SEA
TIMOR SEA
CORAL SEA
TORRES STRAIT
GULF OF CARPENTARIA
INDIAN OCEAN
SOUTH PACIFIC OCEAN
GREAT BARRIER REEF
GREAT AUSTRALIAN BIGHT
SOUTHERN OCEAN
TASMAN SEA
BASS STRAIT
NORTHERN TERRITORY
WESTERN AUSTRALIA
SOUTH AUSTRALIA
NEW SOUTH WALES
QUEENSLAND
VICTORIA
ACT

MELVILLE ISLAND SPECIAL 16 | COBOURG PENINSULA SPECIAL 13 | GALIWINKU 16 | WESSEL ISLANDS SPECIAL | BOIGU 7 | DARU 8 | MABR 5
THURSDAY ISLAND 11 | CAPE YORK 12 | JARDINE RIVER 15 | ORFORD BAY 16
DARWIN 4 | ALLIGATOR RIVER 1 | MILINGIMBI SPECIAL 2 | GOVE PENINSULA SPECIAL 4 | WEIPA SPECIAL | CAPE WEYMOUTH 4
CAPE SCOTT SPECIAL 7 | PINE CREEK 8 | GROOTE EYLANDT SPECIAL | HOLROYD SPECIAL 11
LONDONDERRY 5 | MONTAGUE SOUND SPECIAL 12 | DRYSDALE 9 | MEDUSA BANKS 10 | PORT KEATS 11 | FERGUSSON RIVER 12 | KATHERINE 9 | URAPUNGA 10 | ROPER RIVER 11 | EBAGOOLA 12 | CAPE MELVILLE 9
CAMDEN SOUND SPECIAL 15 | PRINCE REGENT 16 | ASHTON 13 | CAMBRIDGE GULF 14 | AUVERGNE 15 | DELAMERE 16 | LARRIMAH 13 | HODGSON DOWNS 14 | MOUNT YOUNG 15 | ROBINSON RIVER SPECIAL 4 | RUTLAND PLAINS 15 | HANN RIVER 16 | COOKTOWN 13
MORNINGTON ISLAND SPECIAL 1
PENDER 2 | VAMPI 3 | CHARNLEY 4 | MOUNT ELIZABETH 1 | LISSADELL 2 | WATERLOO 3 | VICTORIA RIVER DOWNS 4 | DALY WATERS 1 | TANUMBIRINI 2 | BAUHINIA DOWNS 3 | GALBRAITH 3 | WALSH 4 | MOSSMAN 1 | CAIRNS 2
BROOME 6 | DERBY 7 | LENNARD RIVER 8 | LANSDOWNE 5 | DIXON RANGE 6 | LIMBUNYA 7 | WAVE HILL 8 | NEWCASTLE WATERS 5 | BEETALOO 6 | WALHALLOW 7 | CALVERT HILLS 8 | WESTMORELAND 5 | BURKETOWN 6 | NORMANTON 7 | RED RIVER 8 | ATHERTON 5 | INNISFAIL 6
LAGRANGE 10 | MOUNT ANDERSON 11 | NOONKANBAH 12 | MOUNT RAMSAY 9 | GORDON DOWNS 10 | BIRRINDUDU 11 | WINNECKE CREEK 12 | SOUTH LAKE WOODS 9 | HELEN SPRINGS 10 | BRUNETTE DOWNS 11 | MOUNT DRUMMOND 12 | LAWN HILL 9 | DONORS HILL 10 | CROYDON 11 | GEORGETOWN 12 | EINASLEIGH 9 | INGHAM 10
MANDORA 13 | MUNRO 14 | MCLARTY HILLS 15 | CROSSLAND 16 | MOUNT BANNERMAN 13 | BILLILUNA 14 | TANAMI 15 | TANAMI EAST 16 | GREEN SWAMP WELL 13 | TENNANT CREEK 14 | ALROY 15 | RANKEN 16 | CAMOOWEAL 13 | DOBBYN 14 | MILLUNGERA 15 | GILBERTON 16 | CLARKE RIVER 13 | TOWNSVILLE 14 | AYR 15
PORT HEDLAND SPECIAL 4 | YARRIE 1 | ANKETELL 2 | JOANNA SPRING 3 | DUMMER 4 | CORNISH 1 | LUCAS 2 | THE GRANITES 3 | MOUNT SOLITAIRE 4 | LANDER RIVER 1 | BONNEY WELL 2 | FREW RIVER 3 | AVON DOWNS 4 | MOUNT ISA 1 | CLONCURRY 2 | JULIA CREEK 3 | RICHMOND 4 | HUGHENDEN 1 | CHARTERS TOWERS 2 | BOWEN 3 | PROSERPINE 4
DAMPIER SPECIAL 2 | ROEBOURNE 3
ONSLOW 5 | YARRALOOLA 6 | PYRAMID 7 | MARBLE BAR 8 | NULLAGINE 5 | PATERSON RANGE 6 | SAHARA 7 | PERCIVAL 8 | HELENA 5 | STANSMORE 6 | HIGHLAND ROCKS 7 | MOUNT THEO 8 | MOUNT PEAKE 5 | BARROW CREEK 6 | ELKEDRA 7 | SANDOVER RIVER 8 | URANDANGI 5 | DUCHESS 6 | MCKINLAY 7 | MANUKA 8 | TANGORIN 5 | BUCHANAN 6 | MOUNT COOLON 7 | MACKAY 8 | PERCY ISLES
YARREY SPECIAL 9 | WYLOO 10 | MOUNT BRUCE 11 | ROY HILL 12 | BALFOUR DOWNS 9 | RUDALL 10 | TABLETOP 11 | URAL 12 | WILSON 9 | WEBB 10 | LAKE MACKAY 11 | MOUNT DOREEN 12 | NAPPERBY 9 | ALCOOTA 10 | HUCKITTA 11 | TOBERMOREY 12 | GLENORMISTON 9 | BOULIA 10 | MCKINDA 11 | WINTON 12 | MUTTABURRA 9 | GALILEE 10 | CLERMONT 11 | ST LAWRENCE 12 | PORT CLINTON 9
MINILYA SPECIAL 16 | WINNING POOL 13 | EDMUND 14 | TUREE CREEK 15 | NEWMAN 16 | ROBERTSON 13 | GUNANYA 14 | RUNTON 15 | MORRIS 16 | RYAN 13 | MACDONALD 14 | MOUNT RENNIE 15 | MOUNT LIEBIG 16 | HERMANNSBURG 13 | ALICE SPRINGS 14 | ILLOGWA CREEK 15 | HAY RIVER 16 | MOUNT WHELAN 13 | SPRINGVALE 14 | BRIGHTON DOWNS 15 | MANEROO 16 | LONGREACH 13 | JERICHO 14 | EMERALD 15 | DUARINGA 16 | ROCKHAMPTON 13
CARNARVON SPECIAL 4 | KENNEDY RANGE 1 | MOUNT PHILLIPS 2 | MOUNT EGERTON 3 | COLLIER 4 | BULLEN 1 | TRAINOR 2 | MADLEY 3 | WARRI 4 | COBB 1 | RAWLINSON 2 | BLOODS RANGE 3 | LAKE AMADEUS 4 | HENBURY 1 | RODINGA 2 | HALE RIVER 3 | SIMPSON DESERT NORTH 4 | BEDOURIE 1 | MACHATTIE 2 | CONNEMARA 3 | JUNDAH 4 | BLACKALL 1 | TAMBO 2 | SPRINGSURE 3 | BARALABA 4 | MONTO 1 | BUNDABERG 2
WOORAMEL 5 | GLENBURGH 6 | ROBINSON RANGES 7 | PEAK HILL 8 | NABBERU 5 | STANLEY 6 | HERBERT 7 | BROWNE 8 | BENTLEY 5 | SCOTT 6 | PETERMANN RANGES 7 | ULURU / AYERS ROCK 8 | KULGERA 5 | FINKE 6 | MCDILLS 7 | SIMPSON DESERT SOUTH 8 | BIROSVILLE 5 | BETOOTA 6 | CANTERBURY 7 | WINDORAH 8 | ADAVALE 5 | AUGATHELLA 6 | EDDYSTONE 7 | TAROOM 8 | MUNDUBBERA 5 | FRASER ISLAND SPECIAL 3 | HERVEY BAY 6
MONKEY MIA SPECIAL 12 | YARINGA 9 | BYRO 10 | BELELE 11 | GLENGARRY 12 | WILUNA 9 | KINGSTON 10 | ROBERT 11 | YOWALGA 12 | TALBOT 9 | COOPER 10 | MANN 11 | WOODROFFE 12 | ALBERGA 9 | ABMINGA 10 | DALHOUSIE 11 | POOLOWANNA 12 | PANDIE PANDIE 9 | CORDILLO 10 | BARROLKA 11 | EROMANGA 12 | QUILPIE 9 | CHARLEVILLE 10 | MITCHELL 11 | ROMA 12 | CHINCHILLA 9 | GYMPIE 10 | TEWANTIN-NOOSA
AJANA 13 | MURGOO 14 | CUE 15 | SANDSTONE 16 | SIR SAMUEL 13 | DUKETON 14 | THROSSELL 15 | WESTWOOD 16 | LENNIS 13 | WAIGEN 14 | BIRKSGATE 15 | LINDSAY 16 | EVERARD 13 | WINTINNA 14 | OODNADATTA 15 | NOOLYEANNA 16 | GASON 13 | INNAMINCKA 14 | DURHAM DOWNS 15 | THARGOMINDAH 16 | TOOMPINE 13 | WYANDRA 14 | HOMEBOIN 15 | SURAT 16 | DALBY 13 | IPSWICH 14 | BRISBANE SPECIAL 15
GERALDTON SPECIAL 1 | YALGOO 2 | KIRKALOCKA 3 | YOUANMI 4 | LEONORA 1 | LAVERTON 2 | RASON 3 | NEALE 4 | VERNON 1 | WANNA 2 | NOORINA 3 | WELLS 4 | GILES 1 | MURLOOCOPPIE 2 | WARRINA 3 | LAKE EYRE 4 | KOPPERAMANNA 1 | STRZELECKI 2 | TICKALARA 3 | BULLOO 4 | EULO 1 | CUNNAMULLA 2 | DIRRANBANDI 3 | ST GEORGE 4 | GOONDIWINDI 1 | WARWICK 2 | GOLD COAST | TWEED HEADS
DONGARA 5 | PERENJORI 6 | NINGHAN 7 | BARLEE 8 | MENZIES 5 | EDJUDINA 6 | MINIGWAL 7 | PLUMRIDGE 8 | JUBILEE 5 | MASON 6 | WYOLA 7 | MAURICE 8 | TALLARINGA 5 | COOBER PEDY 6 | BILLA KALINA 7 | CURDIMURKA 8 | MARREE 5 | CALLABONNA 6 | MILPARINKA 7 | URISINO 8 | YANTABULLA 5 | ENNGONIA 6 | ANGLEDOOL 7 | MOREE 8 | INVERELL 5 | GRAFTON 6 | LISMORE SPECIAL 7
HILL RIVER 9 | MOORA 10 | BENCUBBIN 11 | JACKSON 12 | KALGOORLIE 9 | KURNALPI 10 | CUNDEELEE 11 | SEEMORE 12 | LOONGANA 9 | FORREST 10 | COOK 11 | OODEA 12 | BARTON 9 | TARCOOLA 10 | KINGOONYA 11 | ANDAMOOKA 12 | COPLEY 9 | FROME 10 | COBHAM LAKE 11 | WHITE CLIFFS 12 | LOUTH 9 | BOURKE 10 | WALGETT 11 | NARRABRI 12 | MANILLA 9 | ARMIDALE SPECIAL 10 | COFFS HARBOUR
PERTH SPECIAL 14 | KELLERBERRIN 15 | SOUTHERN CROSS 16 | BOORABBIN 13 | WIDGIEMOOLTHA 14 | ZANTHUS 15 | NARETHA 16 | MADURA SPECIAL 13 | EUCLA SPECIAL 14 | COOMPANA 15 | NULLARBOR 16 | FOWLER 13 | CHILDARA 14 | GAIRDNER 15 | TORRENS 16 | PARACHILNA 13 | CURNAMONA 14 | BROKEN HILL 15 | WILCANNIA 16 | BARNATO 13 | COBAR 14 | NYNGAN 15 | GILGANDRA 16 | TAMWORTH 13 | HASTINGS 14 | PORT MACQUARIE
BUSSELTON SPECIAL 5 | PEMBERTON SPECIAL 10 | MOUNT BARKER SPECIAL 11 | BREMER BAY 12 | RAVENSTHORPE 5 | ESPERANCE SPECIAL 6 | MALCOLM SPECIAL 7 | NUYTS 1 | STREAKY BAY 2 | YARDEA 3 | PORT AUGUSTA 4 | ORRORDO 1 | OLARY 2 | MENINDEE 3 | MANARA 4 | IVANHOE 1 | NYMAGEE 2 | NARROMINE 3 | DUBBO 4 | SINGLETON 1 | NEWCASTLE 2
COLLIE 6 | DUMBLEYUNG 7 | NEWDEGATE 8 | ELLISTON 6 | KIMBA 7 | WHYALLA 8 | BURRA 5 | CHOWILLA 6 | ANA BRANCH 7 | POONCARIE 8 | BOOLIGAL 5 | CARGELLIGO 6 | FORBES 7 | BATHURST 8 | SYDNEY SPECIAL 9 | CENTRAL COAST | NEWCASTLE | SYDNEY
LINCOLN SPECIAL 11 | YORKE PENINSULA SPECIAL | ADELAIDE SPECIAL | RENMARK 10 | MILDURA 11 | BALRANALD 12 | HAY 9 | NARRANDERA 10 | COOTAMUNDRA 11 | GOULBURN 12 | WOLLONGONG
KANGAROO ISLAND SPECIAL 16 | BARKER 13 | PINNAROO 14 | OUYEN 15 | SWAN HILL 16 | DENILIQUIN 13 | JERILDERIE 14 | WAGGA WAGGA 15 | CANBERRA 16 | WOLLONGONG SPECIAL 13
NARACOORTE 2 | HORSHAM 3 | ST ARNAUD 4 | BENDIGO 1 | WANGARATTA 2 | TALLANGATTA 3 | BEGA 4
PENOLA SPECIAL 6 | HAMILTON SPECIAL 7 | BALLARAT 8 | MELBOURNE 6 | WARBURTON 7 | BAIRNSDALE SPECIAL 7 | MALLACOOTA 8
GEELONG PORT PHILLIP SPECIAL 9 | COLAC 12 | WARRAGUL SPECIAL 10
TASMANIA NORTH WEST | TASMANIA NORTH EAST | TASMANIA SOUTH WEST | TASMANIA SOUTH EAST

MELBOURNE 5

WOLLONGONG SPECIAL 13

Topographic Map Sheets

1:250 000 scale published topographic map

NOTE : Map numbering system is a combination of horizontal and vertical bands plus the digit on the map sheet, e.g. Melbourne SJ55-5.

1:250 000 scale published topographic map - special

These maps have been designed to provide the user with greater map area coverage.

APPENDIX G
Version 3.6 - Amendment 0
1 July 2004

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Appendix H - Tile and Map Boundaries Guide

1. Introduction **3**

2. Types of extents **3**

3. Paper sizes and map layouts **4**

4. Layouts for unadjusted 1:100 000 sheets **14**

5. Layouts for unadjusted 1:250 000 sheets **14**

6. 1:250 000 Adjusted Sheets **15**

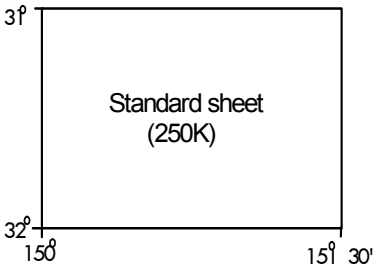
7. 1:100 000 Adjusted Sheets **20**

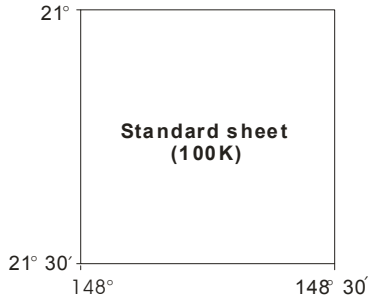
1. Introduction

This appendix outlines the relationship between the extents of the working database, the map extents and GEODATA tile extents. The appendix also details the extents of adjusted sheets.

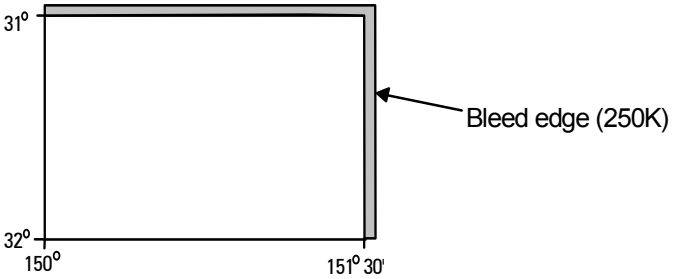
2. Types of extents

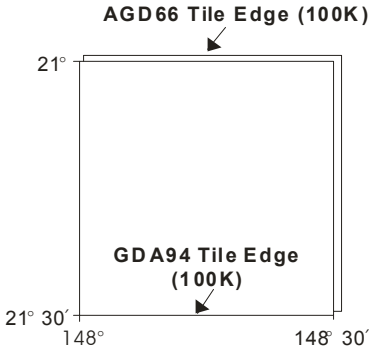
Standard sheet area: the standard sheet areas are 1° in latitude by 1° 30' in longitude for 1:250 000 and 30' in latitude by 30' in longitude for 1:100 000. Unless otherwise specified GEODATA tiles will be standard sheet areas.





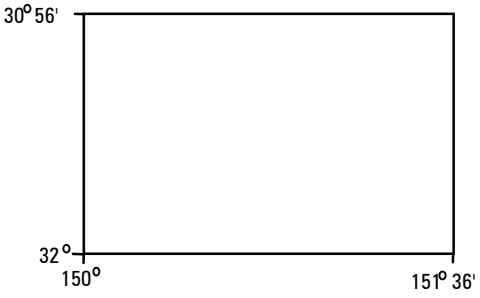
Bleed edge: the bleed edge for 1:250 000 is the 3' extension to the north and 5' extension to the east. The bleed edge extensions are measured from the top right hand corner of the trimmed map. Unless otherwise specified the map extents will be the standard sheet area plus a bleed edge for the 1:250 000 product. For 1:100 000 sheets a small extension (of approximately 200 metres) exists on the northern and eastern edges to facilitate edge matching of maps published on the new GDA94 datum with those published on the AGD66 datum. Two Tile Edges are therefore included on the 1:100 000 product (ie. GDA94 and AGD66).





Adjusted sheets: these sheets have been extended east-west and/or north-south, swung to a portrait format or displaced to eliminate maps which are largely sea area and to contain certain features on a single map. Adjusted map extent layout formats (guides) will be supplied as required.

Working data base extents: The working database covers an area greater than the size of the map sheet to allow for trimming. For 1:250 000 the working data base will extend 1' to the north and east of the bleed edge. For 1:100 000 the working database covers the total extents of the tile area, which includes the detail contained between the GDA94 and AGD66 neatlines.



Working data base (250K)
(above for example)

Insets: Insets are used to display some islands and other offshore features which would not warrant production of a separate map. Where an inset is used on the map both the working data base and the GEODATA tile will extend to show the inset area in its true location

3. Paper sizes and map layouts

The table below details the trimmed paper sizes for 1:250 000 and 1:100 000 maps. All paper sizes fold down to the same size.

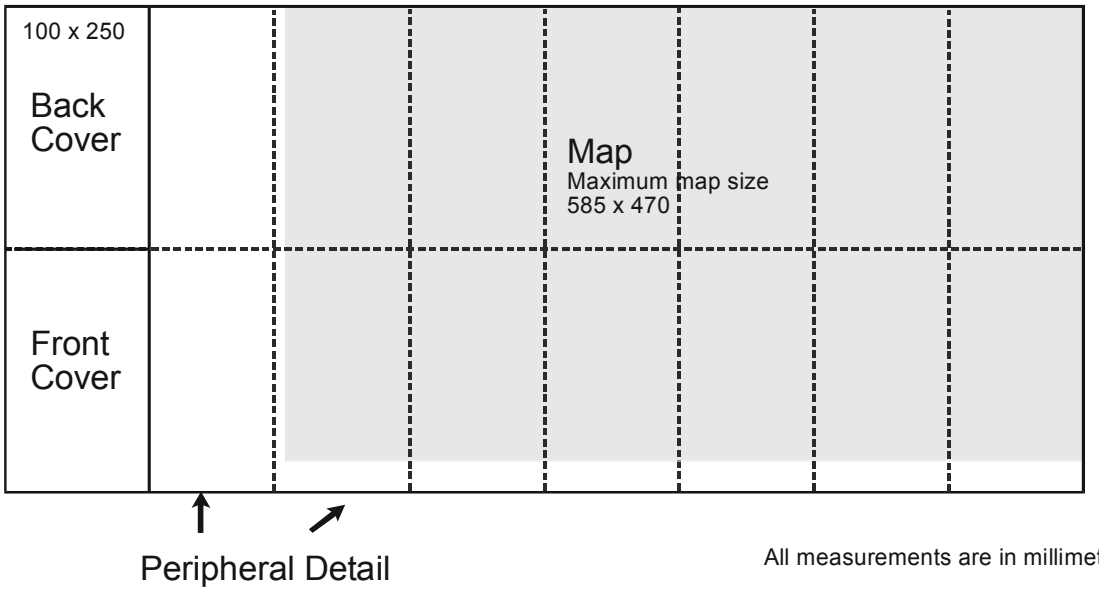
Trim Size	Map layout codes
800 x 500 mm	1A
900 x 500 mm	1B
1000 x 500 mm	1C
600 x 750 mm	1D
700 x 750 mm	1E, 2E
800 x 750 mm	1F, 2F
900 x 750 mm	1G, 2G
500 x 900 mm	1H

The following diagrams show the relationship of trimmed paper size to the number of folds and map extents and indicate the layout of information in the margin. The relationship to the detailed layout guides in Appendix B is also given together with any modifications due to trimmed paper size. The maximum printing area will extend 40 mm above the trim line at the top, 30 mm out from the trim line at the sides and 10 mm at the bottom. All registration marks, colour control and map bleed will fall within the maximum printing area.

Layout 1A

Appendix B Landscape layout. Right hand end of scale bar to be 200 mm from eastern trim line

Trim size 800 x 500

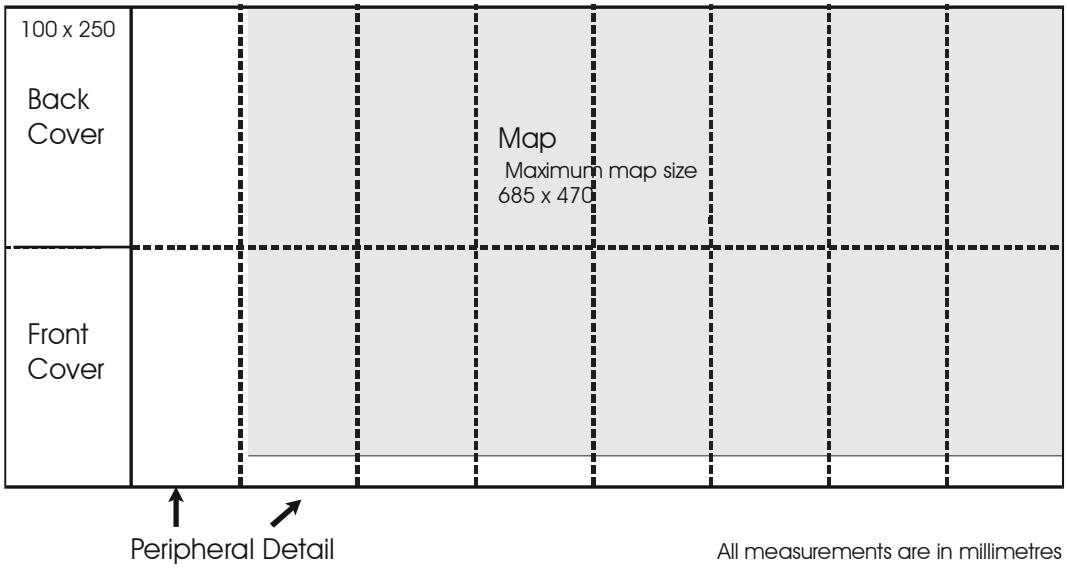


All measurements are in millimetres

Layout 1B

Appendix B Landscape layout. Right hand end of scale bar to be 250 mm from eastern trim line

Trim size 900 x 500



Layout 1C

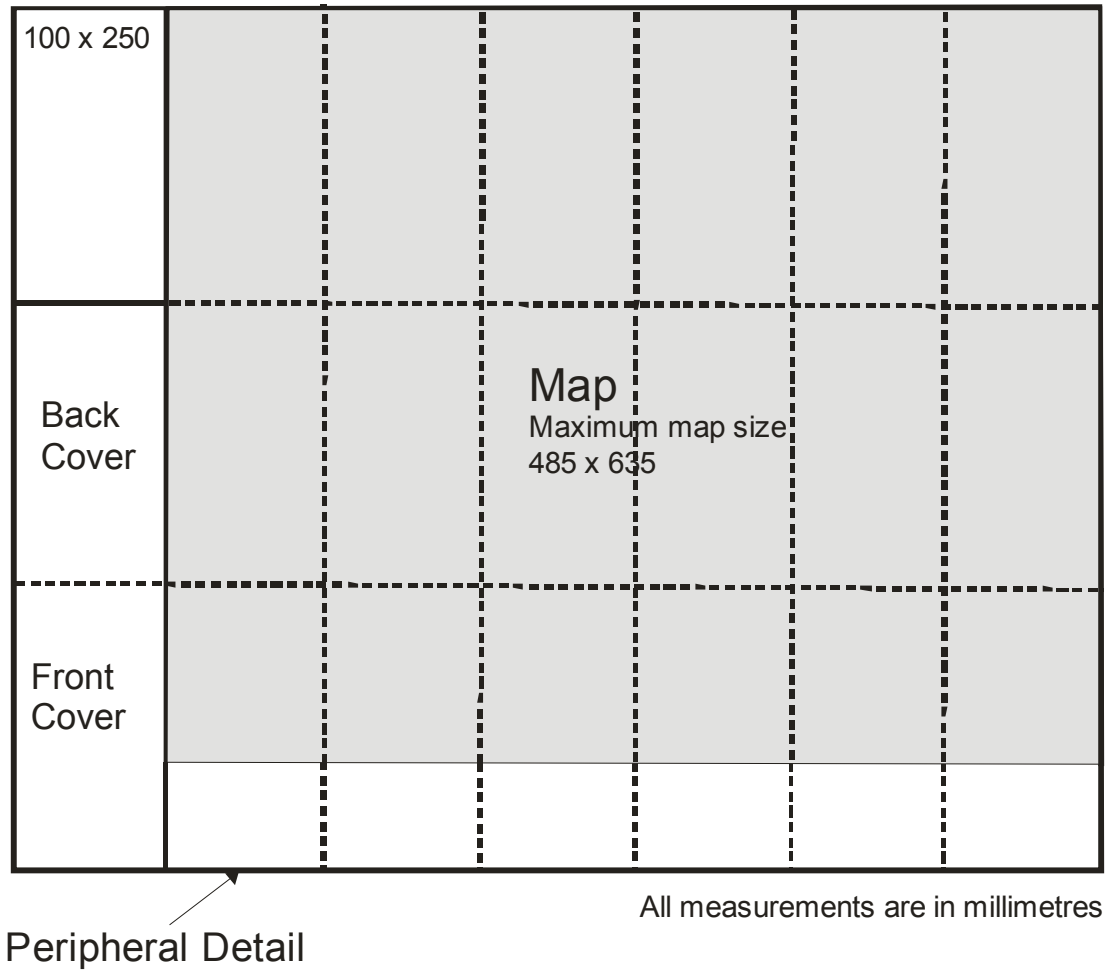
Appendix B Landscape layout. Right hand end of scale bar to be 300 mm from eastern trim line

Trim size 1000 x 500

Layout 1D

Legend and other peripheral data as shown on guide to be issued when map is to be produced.

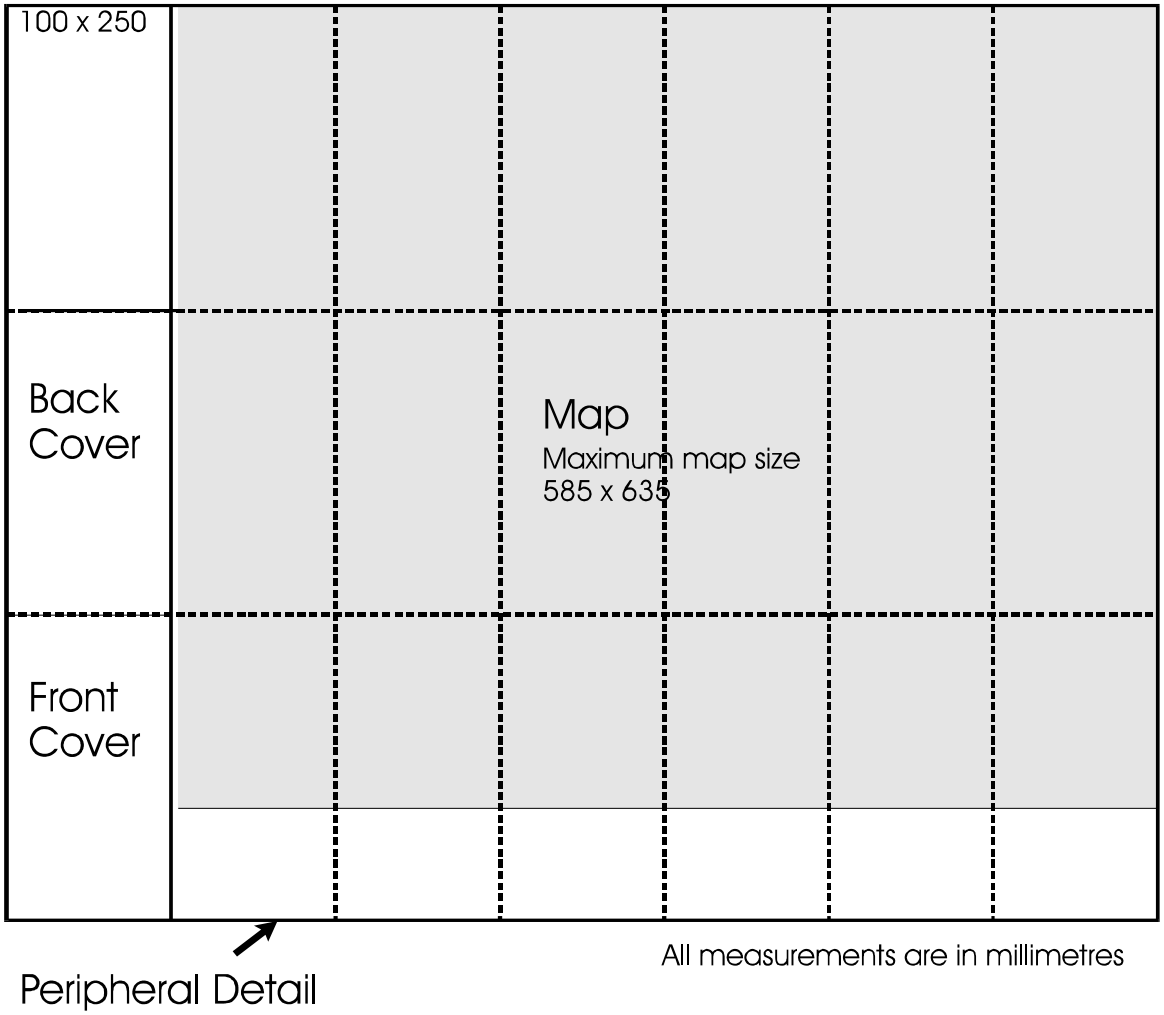
Trim size 600 x 750



Layout 1E

Legend and other peripheral data as shown on guide to be issued when map is to be produced.

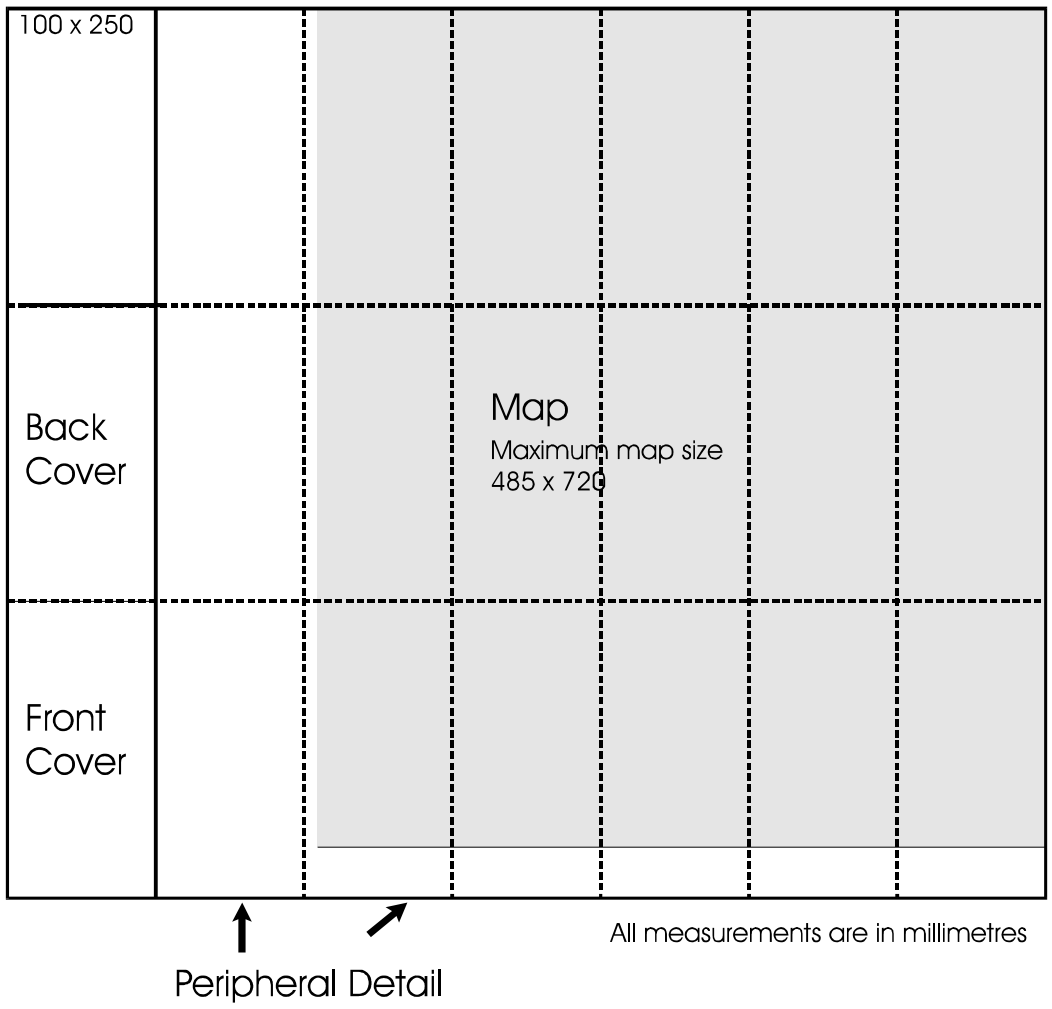
Trim size 700 x 750



Layout 2E

Appendix B Portrait layout. Right hand end of scale bar to be 150 mm from eastern trim line

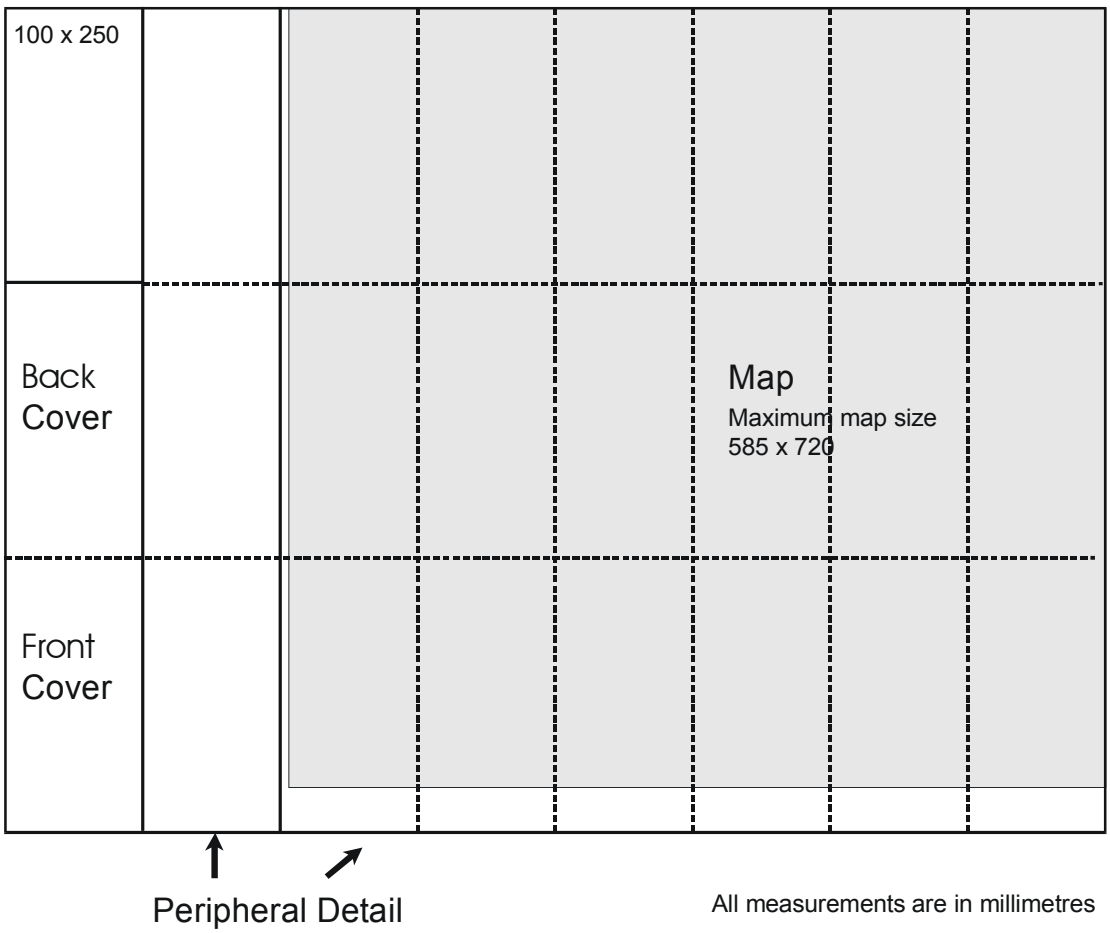
Trim size 700 x 750



Layout 1F

Appendix B Portrait layout. Right hand end of scale bar to be 200 mm from eastern trim line

Trim size 800 x 750

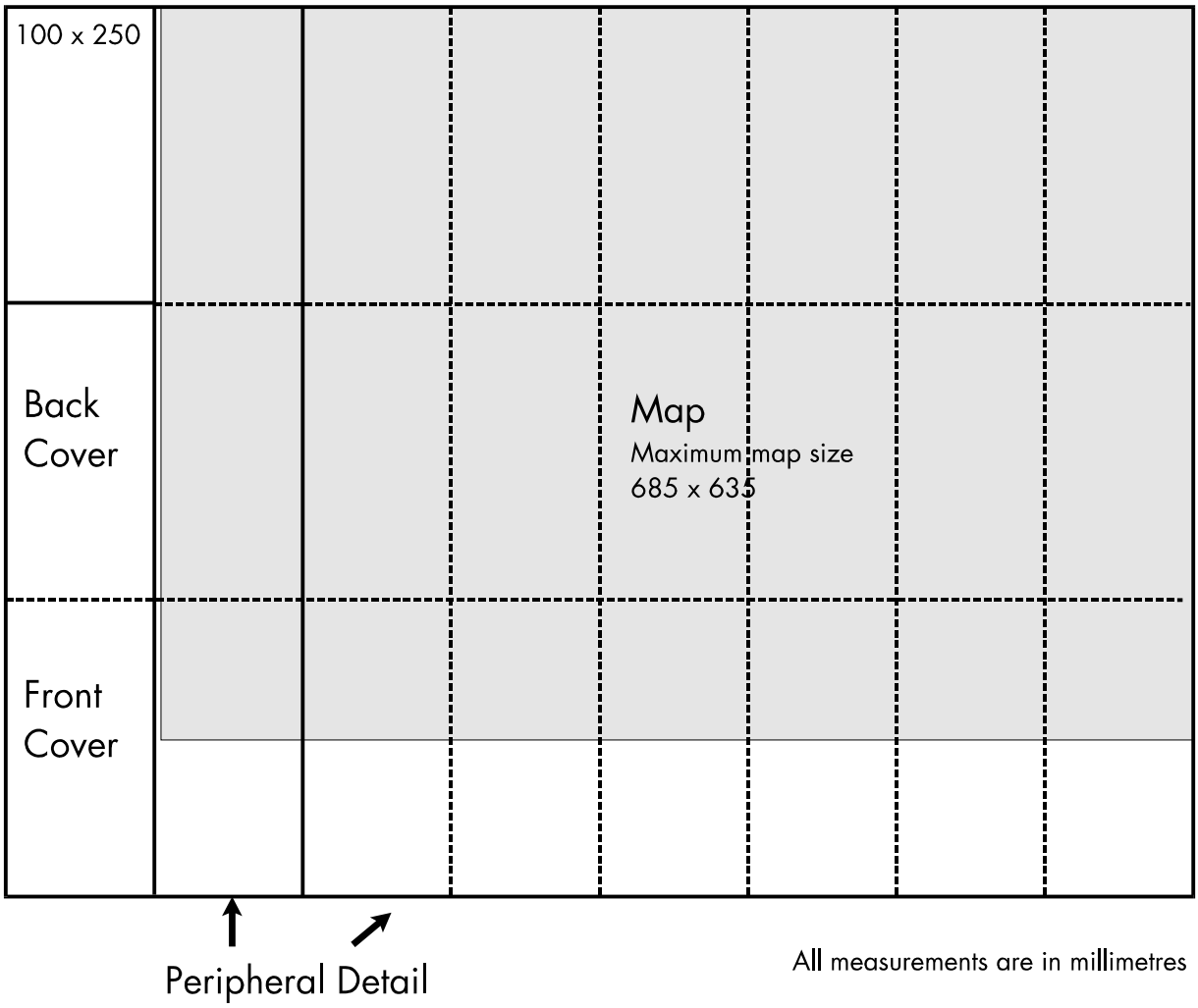


All measurements are in millimetres

Layout 2F

Legend and other peripheral data as shown on guide to be issued when map is to be produced.

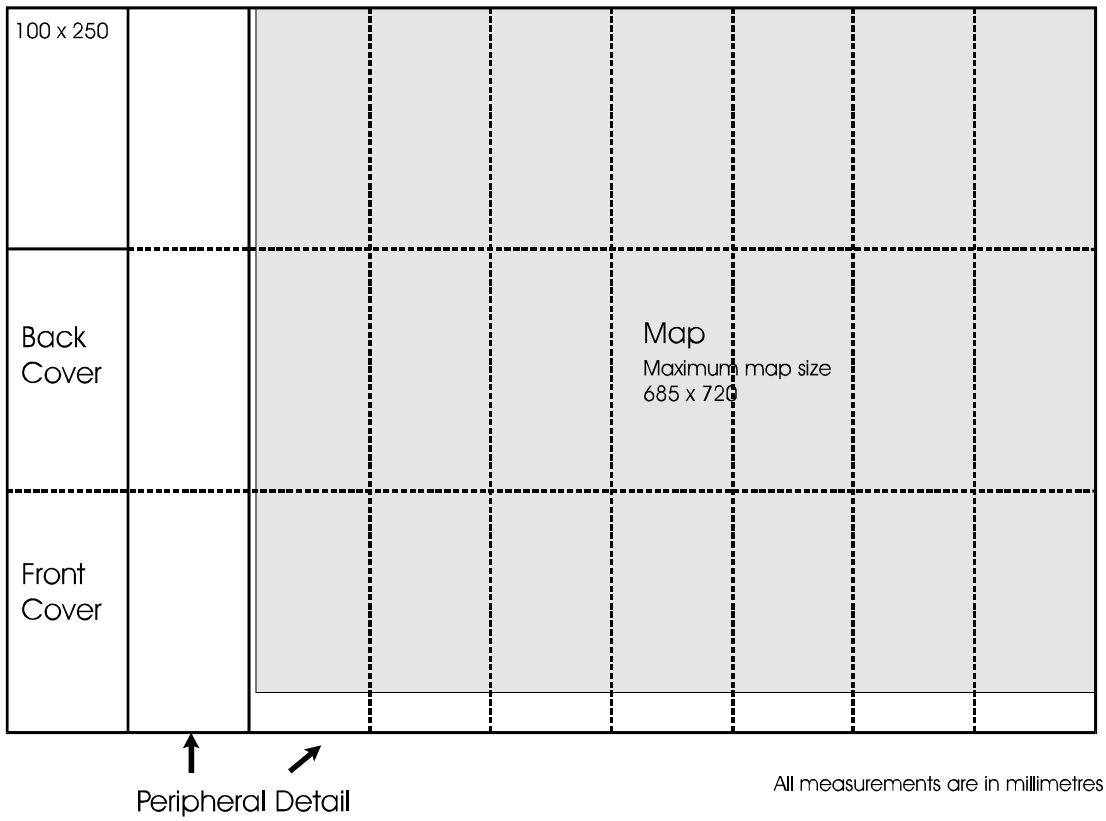
Trim size 800 x 750



Layout 1G

Appendix B Portrait layout. Right hand end of scale bar to be 250 mm from eastern trim line

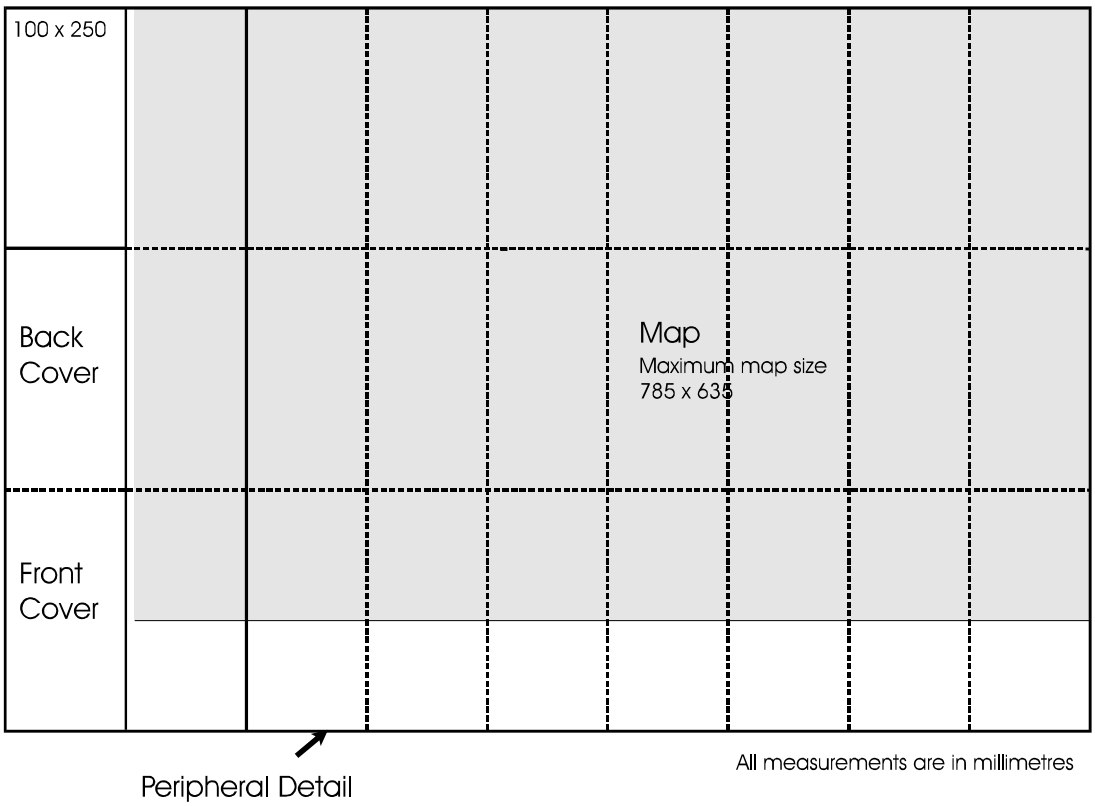
Trim size 900 x 750



Layout 2G

Legend and other peripheral data as shown on guide to be issued when map is to be produced.

Trim size 900 x 750



Layout 1H

Legend and other peripheral data as shown on guide to be issued when map is to be produced.

Trim size 500 x 900

All measurements are in millimetres

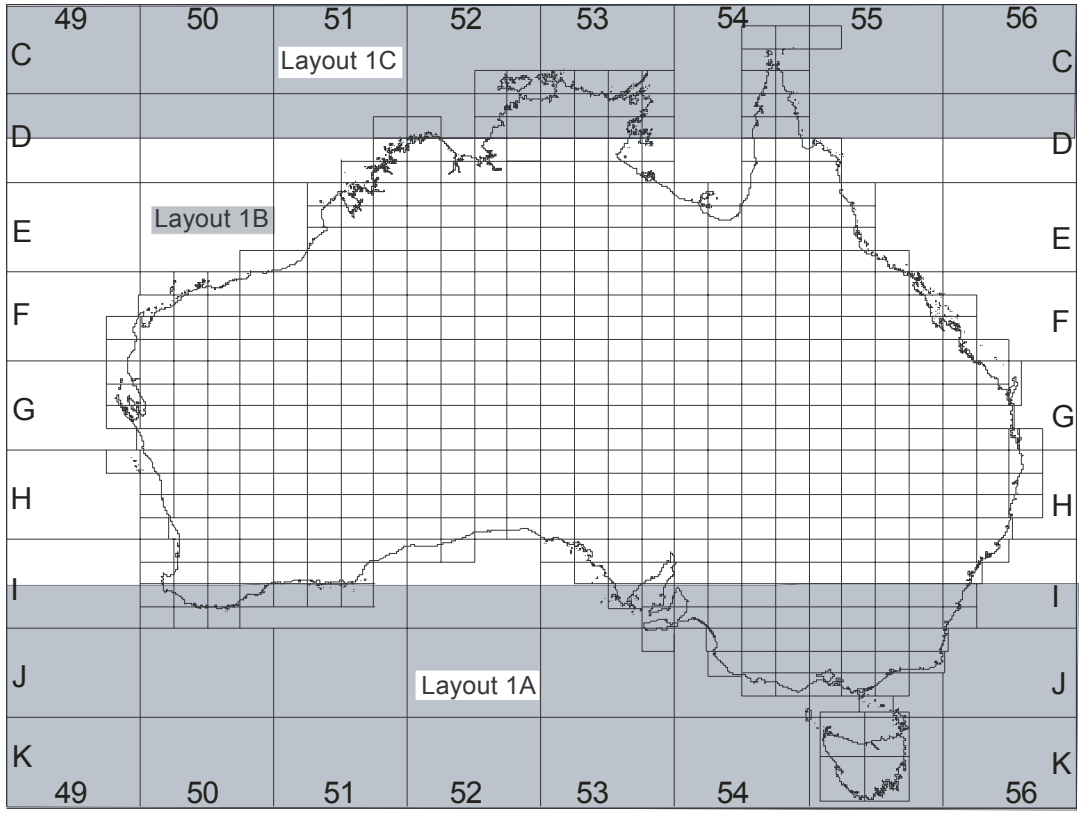
4. Layouts for unadjusted 1:100 000 sheets

For map sheets north of 33° 00' South, the Map Layout Code will be 1E (7 Fold).

For map sheets north of 33° 00' South, the Map Layout Code will be 1D (6 Fold).

5. Layouts for unadjusted 1:250 000 sheets

This index shows the layout for unadjusted maps. The table following this index indicates layouts for adjusted sheets. Appendix G shows both adjusted and unadjusted maps on the one index. Because the sheet extents are defined by geographicals and the distance along a parallel of latitude decreases away from the equator, the width of the map detail decreases going south hence the use of three sheet layouts for unadjusted maps.



6. 1:250 000 Adjusted Sheets

This table gives the map layout code and extents for GEODATA, map and working data bases for adjusted 1:250 000 maps and data. The maps are ordered by working clockwise around the coast starting from Melbourne.

250K MAP	Layout	GEODATA Tile				Map				Working Database			
		SW GEOGRAPHIC		NE GEOGRAPHIC		SW GEOGRAPHIC		NE GEOGRAPHIC		SW GEOGRAPHIC		NE GEOGRAPHIC	
SJ55-9 Port Phillip Special	1F	39°	144°	38°	145°30’	39°	144°	37°27’	145°35’	39°	144°	37°26’	145°36’
SJ54-7 Hamilton Special	1F	38°30’	141°	37°	142°30’	38°30’	141°	36°57’	142°35’	38°30’	141°	36°56’	142°36’
SJ54-6 Penola Special	1F	38°30’	139°30’	37°	141°	38°30’	139°30’	36°57’	141°05’	38°30’	139°30’	36°56’	141°06’
SJ54-2 Naracoorte	1B	37°	139°25’	36°	141°	37°	139°25’	35°57’	141°05’	37°	139°25’	35°56’	141°06’
SI54-9 Adelaide Special	1F	35°	138°	34°	139°30’	35°20	138°	33°57’	139°35’	35°20	138°	33°56’	139°36’
SI53-12 Yorke Peninsula Special	1F	35°30’	136°30’	34°	138°	35°30’	136°30’	33°57’	138°05’	35°30’	136°30’	33°56’	138°06’
SI53-16 Kangaroo Island Special	1C	36°30’	136°30’	35°30’	138°	36°30’	136°30’	35°27’	138°25’	36°30’	136°30’	35°26’	138°26’
SI53-11 Lincoln Special	1F	35°25’	135°	34°	136°30’	35°25’	135°	33°57’	136°35’	35°25’	135°’	33°56’	136°36’
SI53-6 Elliston	1B	34°01’	133°30’	33°	135°	34°01’	133°30	32°57’	135°05’	34°01’	133°30	32°56’	135°06’
SH52-14 Eucla Special	1G	32°20’	127°30’	31°	129°	32°20’	127°30’	30°57’	129°05’	32°20’	127°30’	30°56’	129°06’
SH52-13 Madura Special	1G	32°20’	126°	31°	127°30’	32°20’	126°	30°57’	127°35’	32°20’	126°	30°56’	127°36’
SI51-7 Malcolm Special	1G	34°30’	123°	33°	124°30’	34°30’	123°	32°57’	124°35’	34°30’	123°	32°56’	124°36’
SI51-6 Esperance Special	1G	34°30’	121°30	33°	123°	34°30’	121°30	32°57’	123°05’	34°30’	121°30	32°56’	123°06’

250K MAP	Layout	GEODATA Tile				Map				Working Database			
		SW GEOGRAPHIC		NE GEOGRAPHIC		SW GEOGRAPHIC		NE GEOGRAPHIC		SW GEOGRAPHIC		NE GEOGRAPHIC	
SI50-11 Mount Barker Special	1F	35°30’	117°	34°	118°30’	35°30’	117°	33°57’	118°35’	35°30’	117°	33°56’	118°36’
SI50-10 Pemberton Special	1F	35°30’	115°30’	34°	117°	35°30’	115°30’	33°57’	117°05’	35°30’	115°30’	33°56	117°06’
SI50-5 Busselton Special❖	❖	34°30	114°30’	33°15’	115°30’	34°27	114°35’	33°24’	115°35’	34°30	114°30’	33°14’	115°36’
SI50-2 Pinjarra	1B	33°	115°18’	32°	117°	33°	115°18’	31°57’	117°05’	33°	115°18’	31°56’	117°06’
SH50-14 Perth Special	1G	32°	115°18’	31°’	117°	32°30’	115°18’	30°57’	117°05’	32°30’	115°18’	30°56’	117°06’
SH50-1 Geraldton Special	1C	29°	113°34	28°	115°30’	29°	113°34	27°57’	115°33’	29°	113°34	27°56’	115°36’
SG50-13 Ajana	1C	28°	113°48’	27°	115°30’	28°	113°48’	26°57’	115°35’	28°	113°48’	26°56’	115°36’
SG49-12 Monkey Mia Special	2E	27°	112°53’	25°30’	114°	27°	112°53’	25°27’	114°05’	27°	112°53’	25°26’	114°06’
SG49-4 Carnarvon Special	2E	25°30’	112°55	24°	114°	25°30’	112°55	23°57’	114°05’	25°30’	112°55	23°56’	114°06’
SF49-16 Minilya Special *	1H	24°	113°10’	22°17’	114°	24°	113°10’	22°17’	114°05’	24°	113°10	22°16’	114°06’
SF50-9 Yanrey Special	1C	23°	113°45’	22°00’	115°30’	23°	113°45’	21°57’	115°35’	23°	113°45’	21°56’	115°36’
SF50-5 Onslow	1C	22°	113°54’	21°’	115°30	22°	113°54’	20°57’	115°35	22°	113°54’	20°56’	115°36’
SF50-2 Dampier Special	1C	21°	115°15’	20°	117°	21°	115°15’	19°57’	117°05’	21°	115°15’	19°56’	117°06’
SF50-4 Port Hedland Special	1G	21°	118°30’	19°30’	120°	21°	118°30’	19°27’	120°05’	21°	118°30’	19°26’	120°06’
SD51-15 Camden Sound Special #	1B	16°	123°	14°	124°30’	16°	123°	14°57’	124°35’	16°	123°	14°	124°36’

250K MAP	Layout	GEODATA Tile				Map				Working Database			
		SW GEOGRAPHIC		NE GEOGRAPHIC		SW GEOGRAPHIC		NE GEOGRAPHIC		SW GEOGRAPHIC		NE GEOGRAPHIC	
SD51-12 Montague Sound Special	1G	15°	124°30’	13°30’	126°	15°	124°30’	13°27’	126°04’	15°	124°30’	13°26’	126°06’
SD52-7 Cape Scott Special	2E	14°	129°30’	12°30’	130°30’	14°	129°30’	12°27’	130°35’	14°	129°30’	12°26’	130°36’
SC52-16 Melville Island Special	1C	12°	130°	10°57’	131°45	12°	130°	10°57’	131°47	12°	130°	10°56	131°48
SC53-13 Cobourg Peninsula Special	1C	12°	131°45’	10°57’	133°30’	12°	131°45’	10°57’	133°30’	12°	131°45’	10°56’	133°31’
SD53-2 Milingimbi Special	2G	13°	133°30’	11°40’	135°	13°	133°25’	11°40’	135°05’	13°	133°25’	11°39’	135°06’
SD53-3 Galiwinku Special	2E	13°	135°	11°30’	136°	13°	135°	11°27’	136°05’	13°	135°	11°26’	136°06’
SC53-16 Wessel Islands Special	1C	12°	136°	11°	137°30’	12°	136°	10°57’	137°35’	12°	136°	10°56’	137°36’
SD53-4 Gove Peninsula Special	1C	13°	136°	12°	137°30’	13°	136°	11°57’	137°35’	13°	136°	11°56’	137°36’
SD53-8 Groote Eylandt Special	2E	14°30’	136°30’	13°	137°	14°30’	136°	12°57’	137°05’	14°30’	136°	12°56’	137°06
SE53-4 Robinson River Special	1G	17°	136°30’	15°27’	138°	17°	136°30’	15°27’	138°05’	17°	136°30’	15°26’	138°06’
SE54-1 Mornington Island Special +	1C	17°	138°	16°	139 55’	17°	138°	15°57’	139 45’	17°	138°	15°56	139 55’
SE54-6 Burketown⊕	1B	18°	139°30’	16°57’	141°	18°	139°30’	16°57’	141°05’	18°	139°30’	16°56’	141° 06’
SD54-11 Holroyd Special	1F	15°	141°25’	13°30’	142°30’	15°	141°25’	13°27’	142°35’	15°	141°25’	13°26’	142°36’
SD54-3 Weipa Special	2E	13°30’	141°30’	12°	142°30	13°30’	141°30’	11°57’	142°35’	13°30’	141°30’	11°56’	142°36’

250K MAP	Layout	GEODATA Tile				Map				Working Database			
		SW GEOGRAPHIC		NE GEOGRAPHIC		SW GEOGRAPHIC		NE GEOGRAPHIC		SW GEOGRAPHIC		NE GEOGRAPHIC	
SG56-3 Fraser Island Special	2E	26°	153°	24°30’	153°30	26°	152°30’	24°27’	153°35	26°	152°30’	24°26’	153°36
SG56-10 Gympie	1B	27°	151°30’	26°	153°12’	27°	151°30’	25°57’	153°12’	27°	151°30’	25°56’	153°13’
SG56-15 Brisbane Special	2E	28°30’	153°	27°	154°	28°30’	152°53’	26°57’	154°05’	28°30’	152°53’	26°56’	154°06’
SH56-7 Lismore Special	2E	30°	153°	28°30’	154°’	30°	153°	28°27’	154°05’	30°	153°	28°26’	154°06’
SH56-10 Armidale Special	1B	31°	151°30’	30°	153°17’	31°	151°30’	29°57’	153°17’	31°	151°30’	29°56’	153°18’
SH56-14 Hastings	1B	32°	151°30	31°	153°05’	32°	151°30	30°57’	153°05’	32°	151°30	30°56’	153°06’
SI56-5 Sydney Special	1G	34°30’	150°	33°	151°45’	34°30’	150°	32°57’	151°45’	34°30’	150°	32°56’	151°46’
SI56-13 Wollongong Special	1H	36°	150°	34°30’	151°03’	36°	150°	34°17’	151°02’	36°	150°	34°16’	151°03’
SJ55-4 Bega	1B	37°	148°30’	36°	150°15’	37°	148°30’	35°57’	150°15’	37°	148°30’	35°56’	150°16’
SJ55-8 Mallacoota	1A	38°	148°30’	37°	150°05’	38°	148°30’	36°57’	150°05’	38°	148°30’	36°56’	150°06’
SJ55 -7 Bairnsdale Special	1F	38°33’	147°	37°	148°30’	38°33’	147°	36°57’	148°35’	38°33’	147°	36°56’	148°36’
SJ55-10 Warragul Special ϕ	1F	39°32’	145°30’	38°	147°25’	39°32’	145°30’	37°57’	147°05’	39°32’	145°30’	37°56’	147°26’

❖ SI50-05 Busselton Special - individual layout.

∗ SF49-16 Minilya Special the GEODATA tile for this sheet excludes the area 23° 113°45” to 22° 114° to avoid overlap with the Yanrey tile.

SD51-15 Camden Sound Special the area 14°10’ 123°30’ to 14° 123°38’ covering Browse Island will be inset to the map.

+ SE54-01 Mornington Island Special the area 16°45’ 139°45’ to 16°25’ 139°55’ covering the Bountiful Islands will be inset to the map.

⊕ SE54-06 Burketown the GEODATA tile for this sheet excludes the area 17° 139°30’ to 16°57’ 139°55’ to avoid overlap with the Mornington

Island Special tile

ϕ SJ55-10 Warragul Special the area 39°32’ 147°05’ to 39°25’ 147°25’ covering Deal Island will be inset to the map. The GEODATA tile for this sheet excludes the area 38°33’ 147° to 38° 147°25’ to avoid overlap with the Bairnsdale Special tile.

7. 1:100 000 Adjusted Sheets

This table gives the extents for the map for adjusted 1:100 000 maps. The maps are in order by their number.

100K MAP	SW GEOGRAPHIC		NE GEOGRAPHIC	
1546 Denham	26° 00’	112° 51’	25° 26’	113° 32’
1547 Dorre 1548 Bernier	25° 18’	112° 53’	24° 44’	113° 25’
1640 Abrolhos Special	29° 00’	113° 30’	28° 25’ 30”	114° 03’
1644 Tamala	27° 00’	113° 20’	26° 26’	114° 02’
1648 Carnarvon	25° 00’	113° 21’	24° 26’	114° 02’
1649 Macleod	24° 30’	113° 21’	23° 56’	114° 02’
1650 Minilya	24° 00’	113° 22’	23° 26’	114° 02’
1743 Coolcurda	27° 30’	113° 48’	26° 56’	114° 31’ 45”
1754 Exmouth	22° 00’	113° 52’	21° 26’	114° 32’
1937 Hill River Special	30° 30’	114° 49’	29° 56’	115° 32’
1938 Arrowsmith	30° 00’	114° 49’	29° 26’	115° 32’
1955 Airlie	21° 30’	114° 52’	20° 56’	115° 32’
2035 Gingin	31° 30’	115° 18’	30° 56’	116° 02’
2356 Roebourne	21° 00’	117° 00’	20° 26’	117° 32’
2427 Albany	35° 30’	117° 30’	34° 56’	118° 16’
2528 Manypeaks Special	35° 07’	118° 00’	34° 30’	118° 30’
2657 Port Hedland	20° 30’	118° 30’	19° 56’	119° 02’
2729 Bremer	34° 32’ 15”	119° 30’	33° 58’ 15”	119° 45’
2757 De Grey	20° 30’	119° 00’	19° 56’	119° 32’
2830 Cocanarup	34° 02’ 30”	119° 30’	33° 28’ 30”	120° 02’
2857 Pardoo ϕ	20° 30’	119° 30’	19° 56’	120° 02’
2958 Shoonta ϕ	20° 00’	119° 52’	19° 26’	120° 32’

100K MAP	SW GEOGRAPHIC		NE GEOGRAPHIC	
3260 Lagrange Φ	19° 00’	121° 30’	18° 26’	122° 02’
3329 Mondrain	34° 30’	122° 00’	33° 56’	122° 45’
3361 Villaret Φ	18° 30’	121° 53’	17° 56’	122° 32’
3430 Howick	34° 02’	122° 30’	33° 28’	123° 02’
3530 Sandy Bight	34°02’	123° 00’	33° 28’	123° 32’
3565 Sunday Island	16° 30’	122° 53’	15° 56’	123° 32’
3630 Malcolm	34° 00’	123° 30’	33° 26’	124° 15’
3631 Mount Dean	33° 30’	123° 30’	32° 56’	124° 15’
3666 Macleay	16° 00’	123° 30’	15° 26’	124° 02’
3732 Gambanca	33° 02’	124° 00’	32° 28’	124° 32’
3932 Rockhole	33° 00’	125° 00’	32° 26’	125° 44’
4433 Red Rocks Point	32° 30’	127° 30’	31° 56’	128° 14’
4534 Kuthala Pass	32° 02’	128° 00’	31° 28’	128° 32’
4870 Dombey	14° 00’	129° 30’	13° 26’	130° 02’
5034 Wigunda	32° 00’	130° 30’	31° 26’	131° 14’
5135 Illcumba	31° 32’	131° 00’	30° 58’	131° 32’
5234 Pilpuppie	32° 00’	131° 18’	31° 26’	132° 02’
5334 Coorabie	32°02’15”	132°00’	31° 28’ 15”	132°32’
5475 Croker +	11° 30’	132° 30’	10° 56’	133° 02’
5533 Charra	32°32’	132°48’	31°58’	133°32’
5574 Wellington Range +	12° 00’	133° 00’	11° 26’	133°32’
5732 Streaky Bay	33°00’	133°48’	32°26’	134°32’
5830 Elliston	34°00’	134°16’30”	33°26’	135°02’
5873 Milingimbi	12° 30’	134° 30’	11° 56’	135° 02’
6171 Blane #	13° 30’	136° 00’	12° 56’	136° 39’
6226 Borda **	36°07’	136°30’	35°33’	137°02’

100K MAP	SW GEOGRAPHIC		NE GEOGRAPHIC	
6266 Pellew	16° 00’	136° 30’	15° 26’	137° 09’
6272 Caledon #	13° 02’	136° 30’	12° 58’	137° 02’
6275 Marchinbar	11° 30’	136° 24’	10° 56’	137° 02’
6326 Vivonne **	36°07’	137°00’	35°33’	137°32’
6327 Coonarie	35°30’	136°46’	34°56’	137°32’
6365 Robinson *	16° 30’	137° 00’	15° 56’	137° 32’
6426 Kingscote **	36°07’	137°30’	35°33’	138°16’
6429 Maitland	34°30’	137°17’	33°56’	138°02’
6432 Cultana	33°02’	137°30’	32°28’	138°02’
6526 Jervis	36°00’	138°00’	35°26’	138°46’
6627 Milang	35°30’	138°16’	34°56’	139°02’
6726 Meningie	36°00’	138°46’	35°26’	139°32’
6763 Point Parker	17° 30’	139° 00’	16° 56’	139° 39’
6764 Mornington	17° 00’	138° 56’	16° 30’	139° 44’
6765 Lowareah Point	16° 30’	139° 15’	15° 56’	139° 47’
7266 Rutland Plains	16° 00’	141° 22’	15° 26’	142° 01’ 40”
7270 Archer River	14° 00’	141° 23’	13° 26’	142° 02’
7376 Thursday Island	11° 00’	141° 54’	10° 26’	142° 32’
7421 Mortlake	38°32’	142°30’	37°58’	143°02’
7475 Orford Bay	11° 30’	142° 30’	10° 56’	143° 08’
7520 Princetown	39°00’	142°44’	38°26’	143°32’
7571 Lockhart River	13° 30’	143° 00’	12° 56’	143° 39’
7572 Cape Weymouth	13° 00’	143° 00’	12° 26’	143° 38’
7577 Coconut Island	10° 34’	143° 00’	10° 00’	143° 32’
7670 Silver Plains	14° 00’	143° 30’	13° 26’	144° 04’
7721 Geelong	38°30’	144°00’	37°56’	144°48’

100K MAP	SW GEOGRAPHIC		NE GEOGRAPHIC	
7921 Western Port	38°32'15"	145°00'	37°58'15"	145°32'
8020 Wonthaggi	39°00'	145°14'	38°26'	146°02'
8063 Bartle Frere	17° 30'	145° 30'	16° 56'	146° 10'
8321 Sale	38°30'	147°00'	37°56'	147°48'
8458 Cape Upstart	20° 00'	147° 30'	19° 26'	148° 05'
8657 Proserpine	20° 30'	148° 30'	19° 56'	149° 10'
8756 Cumberland Islands	21° 00'	149° 00'	20° 26'	149° 40'
8823 Eden	37° 30'	149° 30'	36° 56'	150° 10'
8824 Bega	37° 00'	149° 30'	36° 26'	150° 10'
8825 Cobargo	36° 30'	149° 30'	35° 56'	150° 16'
8855 Prudhoe Island	21° 30'	149° 30'	20° 56'	150° 05'
8954 Percy Isles	22° 00'	150° 00'	21° 26'	150° 35'
9029 Wollongong	34° 30'	150° 30'	33° 56'	151° 16'
9051 Rockhampton *	23° 30'	150° 30'	22° 56'	151° 11'
9053 Peninsula Range	22° 30'	150° 30'	21° 56'	151° 05'
9131 Gosford	33° 30'	151° 00'	32° 56'	151° 45'
9150 Gladstone *	24° 00'	151° 00'	23° 26'	151° 35'
9249 Miriam Vale	24° 30'	151° 30'	23° 56'	152° 02' 30"
9251 Heron Island	23° 35'	151° 30'	23° 01'	152° 02'
9435 Kempsey	31° 30'	152° 30'	30° 56'	153° 07'
9436 Macksville	31° 00'	152° 30'	30° 26'	153° 07'
9437 Dorrigo	30° 30'	152° 30'	29° 56'	153° 14'
9444 Nambour	27° 00'	152° 30'	26° 26'	153° 12'
9445 Gympie	26° 30'	26° 00'	25° 56'	153° 12'
9446 Maryborough	26° 00'	152° 30'	25° 26'	153° 12'
9540 Lismore	29° 00'	153° 00'	28° 26'	153° 40'

100K MAP	SW GEOGRAPHIC		NE GEOGRAPHIC	
9541 Murwillumbah	28° 30’	153° 00’	27° 56’	153° 36’

ϕ There will be an overlap of detail in the SW corner of Shoonta and the NE corner of Pardoo

Φ There will be an overlap of detail in the NE corner of Lagrange and the SW corner of Villaret

There will be an overlap of detail in the SW corner of Caledon and the NE corner of Blane

+ There will be an overlap of detail in the SE corner of Croker and the NW corner of Wellington Range

∗ There will be an overlap of detail in the SE corner of Vanderlin and the NE corner of Robinson

∗∗To fit Kangaroo Island on 3 sheets, the top 3 sheets have been moved south by 3’

∗ There will be an overlap of detail in the SE corner of Rockhampton and the NW corner of Gladstone

Appendix I - Tile Quality Information

Examples of Tile Quality Information

This section gives examples of Tile Quality Information for typical TOPO-250K and TOPO-100K tiles.

Text in Italics is an example of a typical answer.

TILE QUALITY INFORMATION TABLE (TOPO-250K)

IDENTIFICATION	
TILE_NAME:	*MELBOURNE*
TILE_CODE:	*SJ 55-05*
THEME:	*HYDROGRAPHY*
TECH_SPEC	*GTVPTS 4.0*
QC_PASSED	*19/07/2004*
FMT_CONV_SW	*Pro Vec 2.1*
FMT_CONV_DT	*13/10/2003*
DATUM	*GDA94*

TILE QUALITY INFORMATION TABLE (TOPO-100K)

IDENTIFICATION	
TILE_NAME:	*WOLLONGONG*
TILE_CODE:	*9029*
THEME:	*HYDROGRAPHY*
TECH_SPEC	*GTVPTS 2.1*
QC_PASSED	*19/07/2004*
FMT_CONV_SW	*Pro Vec 2.1*
FMT_CONV_DT	*13/10/2003*
DATUM	*GDA94*

TILE FREQUENCY TABLE FOR WATERBODIES COVER (TOPO-250K and TOPO-100K)

canal_a	14
junction	1
lake	39
reservoir	1
sub_to_inund	25
swamp	25
watercours_a	13
waterline	327

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1. About Validation and Testing

The Validation and Testing cell (VAT) tests the GEODATA, Working Database and NATMAP for compliance to the Technical Specifications. The standard tests are outlined in this Appendix. Other tests may be carried out to ensure compliance to the Specification from time to time.

Testing is carried out using a mixture of UNIX scripts, ARC/INFO AMLs and on-screen checks. Many of the tests are automated, using customised ARC/INFO AMLs. These are supported by on screen graphical checks and visual inspection of the map.

Where feature populations are small or the tests are particularly important, the full population will be tested. Where feature populations are large, or a less stringent tolerance applies, a sample area or statistical subset may be tested. Statistical subsets are a random selection of features from the whole population, while a sample area tests all the relevant features within a selected geographical area.

Statistically acceptable procedures are adopted for tests that require sampling. The sampling procedures adopted are based on the Australian Standard AS1199-1988: Sampling procedures and tables for inspection by attribute.

The Acceptable Quality Level (AQL) is in the range of 0% to 5%. Generally, the AQL is applied to each relevant coverage in the database.

The following tables give the appropriate sample size for particular population sizes, and acceptance and rejection numbers for particular sample sizes and Acceptable Quality Levels (AQL's).

	AQL	0.50%	1%	2%	5%	10%
Population size	Sample Size	Ac, Re	Ac, Re	Ac, Re	Ac, Re	Ac, Re
2 to 8	2				0,1	
9 to 15	3			↓	↑	↓
16 to 25	5			0,1	↓	1,2
26 to 50	8		↓	↑	2,3	3,4
51 to 90	13	↓	0,1	↓	2,3	3,4
91 to 150	20	0,1	↑	1,2	3,4	5,6
151 to 280	32	↑	↓	2,3	4,5	7,8
281 to 500	50	↓	1,2	3,4	5,6	10,11
501 to 1200	80	1,2	2,3	4,5	8,9	14,15
1201 to 3200	125	2,3	3,4	6,7	12,13	21,22
3201 to 10000	200	3,4	5,6	8,9	17,18	↑
10001 to 35000	315	4,5	7,8	12,13	21,22	
35001 to 150000	500	6,7	10,11	17,18	↑	
150001 to 500000	800	8,9	14,15	21,22		
500001 and over	1200	12,13	21,22	↑		

↓ Use the first sampling plan below the arrow. If the sample size equals, or exceeds the
population size, carry out 100% inspection.
↑ Use the first sampling plan above the arrow.
Ac Accept Number
Re Reject Number

For some tests, no errors are allowed and the entire population is tested. For other tests, samples are tested to ensure that an error rate of between 0.5% and 5% is possible in the data.

Where records indicate that a particular test is passed every time for Work Units from a contractor, those tests will be classified into a 'spot' class. Spot tests are carried out on a random sample of work units. This procedure continues until the data begins to fail the test. When this happens the test will again be carried out on all Work Units until it can again be classified in the spot class. Where tests are automated or are critical, they are performed for each Work Unit, regardless of the past record.

This testing methodology ensures a 99% confidence that the error rate is less than the AQL.

Where errors are detected but the number of errors detected is less than the rejection number, the test is passed but noted in the 'other test errors' section of the VAT report. If the tile fails another test the tile should be examined for errors of this type and the errors must be fixed before the tile is submitted again. If the tile passes these errors are recorded and corrected when future revision takes place.

2. Validation tests

The following tables describe the tests carried out in VAT, the sample size and the AQL. Tests are numbered with gaps left in case additional tests need to be added later. The table at Appendix J chapter 4. VAT TEST TO REPORT NUMBER CROSS-REFERENCE cross-references the test numbers to the numbers found in VAT reports. The table at Appendix J chapter 5. VAT REPORT TO TEST NUMBER CROSS-REFERENCE cross references from the report numbers back to the test numbers.

2.1 GEODATA and Working Database (1:1250 000 & 1:100 000 scale)

2.1.1 Attribute Accuracy

Attribute accuracy is a measure of the degree to which the features and their attributes agree with the information on the source material. For this product, attribute accuracy is a measure of the degree to which the attribute values of a feature agree with the information on the source material.

TEST NO	ATTRIBUTES TESTED	TEST SAMPLE SIZE	AQL
1	Unique feature identifiers (UFIs) are valid and within the allocated range (1:250 000 only – UFIs are not assigned at 1:100 000 scale)	Full population	No errors
2	All features have a valid data quality pointer	Full population	2%

TEST NO	ATTRIBUTES TESTED	TEST SAMPLE SIZE	AQL
3	Attribute values other than for UFI and Data Quality Pointer are within the valid ranges as specified in the Data Dictionary	Full population	2%
4	Features have the correct feature code	Statistical subset	1%
5	The 'state' attribute of mainland and islands is correct	Full population	No errors
6	The sea has the correct name	Full population	No errors
7	Islands have the correct name	Statistical subset	5%
8	The entire neatline of the tile is coded as tile edge	Full population	1%
9	Watercourses have the correct name	Statistical subset	5%
10	Roads have the correct name	Statistical subset	5%
11	The perenniality of lakes is correct	Statistical subset	5%
12	The perenniality of watercourses is correct	Statistical subset	5%
13	Aircraft facility type is correct	Full population	5%
14	Aircraft facility name is correct	Full population	5%
15	Railway track status is correct	Statistical subset	5%
16	Railway track number is correct	Statistical subset	5%
17	Railway track gauge is correct	Statistical subset	5%
18	Railway names are correct	Statistical subset	5%
19	Road classification is correct	Statistical subset	5%
20	Road formation is correct	Statistical subset	5%
21	National route numbers on roads are correct and complete	Statistical subset	5%
22	State route numbers on roads are correct and complete	Statistical subset	5%
23	Localities have the correct name	Statistical subset	2%
24	Names of watercourses are carried the entire length where intended	Statistical subset	2%
25	Names of roads are carried the entire length where intended	Statistical subset	2%

TEST NO	ATTRIBUTES TESTED	TEST SAMPLE SIZE	AQL
26	National route numbers of roads are carried the entire length where intended	Statistical subset	2%
27	State route numbers of roads are carried the entire length where intended	Statistical subset	2%
28	Status of railways is carried the entire length of the feature where intended	Full population	2%
29	Name of Railways are carried for the entire length of the feature where intended.	Full population	2%
30	Gauge of railways is carried the entire length of the feature where intended	Full population	2%
31	Product of pipelines is carried the entire length of the feature where intended	Full population	2%
32	Relationship of pipelines is carried the entire length of the feature where intended	Full population	2%
33	All channels in a braided stream with primary banks carry the name of the watercourse	Statistical subset	5%
34	Built-up area names are correct	Statistical subset	5%
35	Reserve or prohibited areas are correct	Statistical subset	5%
36	Hierarchy of watercourses are correct	Statistical subset	5%
37	Waterbody names are correct	Statistical subset	5%

2.1.2 Logical Consistency

Logical consistency is a measure of the degree to which the data are internally consistent and comply with the technical specification in the way they are structured.

TEST NO	LOGICAL CONSISTENCY CHECK	TEST SAMPLE SIZE	AQL
40	Names of export files and data quality table are correct	Full population	No errors
41	Table names are valid	Full population	No errors
42	Item names in coverages are valid	Full population	No errors
43	Item names are present in coverage attribute files	Full population	No errors
44	Linear features have more than one coordinate pair	Full population	No errors
45	Label points and entity point features have only one coordinate pair	Full population	No errors

TEST NO	LOGICAL CONSISTENCY CHECK	TEST SAMPLE SIZE	AQL
47	Line segments are greater than 0.00022 degrees in length (250K) / 0.00010 degrees (100K)	Full population	5%
48	Line segments are less than 0.25368 degrees in length (250K) / 0.147 degrees (100K)	Full population	0.5%
49	The tile edge is correctly densified.	Full population	1%
50	The ArcInfo coverages can be generated, have attributes attached and be 'built'	Full population	No errors
51	There are no coincident line segments within a single coverage or intersecting arcs without a node or double digitised points	Full population	0.5%
52	In polygon coverages there are no label errors ie. every polygon has one and only one polygon label point	Full population	No errors
53	There are no pseudo nodes present, ie. nodes separating arcs with the same attributes excepting the cases outlined in Section 1 chapter 3.1	Full population	2%
54	There are no overshoots, ie. arc overhangs at intersections	Statistical subset	1%
55	There are no undershoots, ie. arcs failing to meet at intersections	Statistical subset	0.5%
56	There are no new polygons smaller than the minimum specified area	Full population	5%
57	In line coverages there are no small polygons	Statistical subset	5%
58	There are no new linear features shorter than the minimum length	Full population	5%
59	No arcs separate polygons with identical attributes, except for the UFI, ie. abutting polygons do not have the same attributes	Full population	1%
60	There are no artefacts such as spikes or deviations visible at 1:125 000 (250K)/1:50 000 (100K)	Statistical subset	5%
61	Homesteads are cloned to buildings coverage	Full population	5%
62	Separate covers have exactly coincident lines where intended.	Statistical subset	5%
63	The separation of the digital data linework from the source material due to filtering is not greater than 50 metres (250K) / 20 metres (100K)	Statistical subset	5%

TEST NO	LOGICAL CONSISTENCY CHECK	TEST SAMPLE SIZE	AQL
64	Road point bridges and tunnels, grids and gates are coincident with nodes in the road network	Full population	1%
65	Rail point bridges and tunnels and rail stations are coincident with nodes in the rail network	Full population	1%
66	On stream waterholes, waterfalls and locks are coincident with nodes in the stream network	Full population	1%
67	Well-defined point features are located within 100 metres (250K) / 40 metres (100K) of their position on the source material.	Full population	1%
68	There are no spot elevations or survey marks in the sea	Full population	1%
69	There are no spot elevations or survey marks in waterbodies	Full population	1%
70	Features coded as tile edge appear only on the tile edges.	Full population	1%
71	Features labelled as junction features occur only between waterbodies, waterbodies and the sea, double-sided streams and waterbodies or another double-sided stream.	Statistical subset	1%
72	Connector features occur only within a mainland waterbody	Full population	1%
73	Features labelled as island or reef are completely surrounded by sea	Full population	1%
74	Datum shifting has occurred and is correct within 3 metres	Full population	No errors
75	Tile quality and frequency tables are valid	Full population	No errors
76	Features labelled as waterbodies ie. lake, swamp etc., except sea, occur only within the mainland	Full population	1%
77	Features labelled as ferry routes occur only within waterbodies or the sea	Full population	0.5%
78	Mangroves are a clone of Mangrove Flat	Full population	1%
79	Spot heights and Horizontal control points agree with the contours	Full population	1%
80	Spot heights labelled as ‘depression’ and ‘sand ridge’ spot heights are valid ie. occur in a depression or on a sand ridge	Full population	5%
81	Features labelled as wrecks, offshore rock or	Full population	1%

TEST NO	LOGICAL CONSISTENCY CHECK	TEST SAMPLE SIZE	AQL
	localities (marine) do not fall on land		
82	Sand ridges, roads and railways do not fall within waterbodies	Full population	1%
83	Buildings, localities, caves or pinnacles do not fall within the sea	Full population	1%
84	Buildings and localities do not fall within waterbodies	Full population	1%
85	Polygons in the vegetation coverage do not exist incorrectly within other polygon features.	Full population	1%
86	In the data quality table the data quality pointer values are unique	Full population	No errors
87	All linear features that should meet the tile edge do	Full population	1%
88	There are nodes on polygon features where they cross the tile edge	Full population	1%
89	Linear features that cross the tile edge have the same attributes on both map sheets, where appropriate, excluding the UFI and data quality pointer	Statistical subset	5%
90	Polygon features that cross the tile edge have the same attributes on both map sheets, where appropriate, excluding the UFI and data quality pointer	Full population	1%
91	Features that cross the tile edge, join their corresponding feature correctly, ie. at the same point on the tile edge	Full population	1%
92	Data format, projection and data type are correct	Full population	No errors
93	GEODATA and Working Database resolution is correct	Full population	No errors
94	Features are matched between GEODATA and Working Database coverages	Full population	No errors
95	Tile extents for GEODATA and Working Database are correct	Full population	No errors
96	Road junctions, passes or populated places are coincident with roads where specified	Full population	5%
97	Coastline is cloned as zero height contour	Full population	1%
98	State border is consistent with the border information in COAST-100K data where	Full population	No errors

TEST NO	LOGICAL CONSISTENCY CHECK	TEST SAMPLE SIZE	AQL
	specified.		
99	Features are consistent with Appendix C Fences and Water Facilities Guide	Full population	1%
100	Ferry routes are connected to road or rail network	Full population	5%

2.1.3 Completeness

Completeness is the measure of the degree to which all features listed in the technical specifications have been captured, in accordance with the selection criteria, definitions and other rules specified.

	COMPLETENESS CHECK	TEST SAMPLE SIZE	AQL
106	All features on the source materials have been captured where they meet selection criteria	Statistical subset	2%
107	Revision has been applied correctly	Sample area	2%
108	Data falls within the tile edge.	Full population	1%
109	Spatial position or attributes of features in overlap areas are identical to adjoining tiles where specified	Full population	5%

2.2 NATMAP

2.2.1 Reproduction Material

Reproduction Material is the plate making film negatives that will be used to print the map. All tests on the reproduction material are mandatory.

Test No	**CHECK**	**AQL**
120	Chemical proof is produced from film negatives supplied	No errors
121	Proof registration is correct and registration control marks exist	No errors
122	Colour control exists and is correct	No errors
123	Masking of features on film negatives is correct	1%
124	Film negatives are correctly labelled	No errors

2.2.2 Marginalia

The marginalia is all the information contained in the map surrounds, the area of the map to the left and below the neatline. All tests on the marginalia are mandatory and errors are not acceptable.

TEST NO	DIAGRAMS/ NOTES etc.	CHECK	AQL
130	**Printing Date**	Commonwealth of Australia Copyright date appears	No errors
131	**Map Reliability**	Date of information appears	No errors
132	**Commonwealth Coat of Arms**	Appears and is in the correct position. Correct Coat of Arms used and the colour is correct	No errors
133	**Bar Code**	Is unique to Map and able to be read by scanner	No errors
134	**Map Scale**	Appears and is correct	No errors
135	**GEOCAT Number**	Appears and is in the correct position. The GEOCAT (project) number is correct as per the Project File.	No errors
136	**Map Name**	Spelling is correct Appears twice, panel 1 and bottom right hand corner	No errors
137	**Map Number**	Number relates to sheet name Appears twice, panel 1 and bottom right hand corner	No errors
138	**Map Edition**	Edition number is correct, Appears twice, panel 1 and bottom right hand corner	No errors
139	**State Names**	State names are correct Appears twice, panel 1 and bottom right hand corner	No errors
140	**Map of Australia Location Box**	Location box is placed into correct position & correct colour used.	No errors
141	**Index to Adjoining Maps box**	250k map names and numbers appear and are correct 100K map names and numbers appear and are correct Extended sheet lines have been adjusted in diagram Text is not cluttered.	No errors
142	**Text Panels**	No textual or typographical errors in marginalia	No errors
143	**Datum Information**	Horizontal accuracy figures are correct Vertical accuracy figures are correct Contour interval in metres is correct	No errors
144	**North Point Diagram**	True north is vertical Diagram reflects assigned values Assigned values are correct	No errors
145	**Grid Reference Point**	The grid reference point agrees with the sample given Spelling of the sheet name and reference point is correct	No errors

TEST NO	DIAGRAMS/ NOTES etc.	CHECK	AQL
146	**100 000 square metre identification panel**	Letters are as per information supplied Location of Grid Reference letters (not on neatline)	No errors
147	**Climate Graph**	Is present and Correct for stated locality/s	No errors
148	**Legend**	Symbology is the same as appears on the map	No errors
149	**Geographical Values**	Values are correct for this map Interval is correct (10')	No errors
150	**Grid Values**	Offset from geographical values where necessary	No errors
151	**Road Destinations Arrows and Text**	The angle to and spelling of destinations are correct Do not clash with grid values Road Destination Arrows & Distances appear only on the west and south edges (250K only)	No errors
152	**Scale Bar**	Represented in kilometres only	No errors

2.2.3 Internal Type Selection and Placement

TEST NO	CHECK	TEST TYPE	AQL
	Cultural		
160	Feature names are positioned unambiguously	Sample Area	5%
161	Feature names are clear of other map detail	Sample Area	2%
162	All registered **Aerodromes** have been shown with correct symbology and name (Military airfields excepted). See Enroute Supplement Australia for registered airfields	Full Population	1%
163	Where a **name** has been **abbreviated** it complies with the approved abbreviations Section 2 chapter 7 and features have been abbreviated as required (eg. MOUNTAIN to MT (prefix) or MTN (suffix) for topo features	Sample Area	2%
164	All **internal type** is in the correct alignment	Full Population	1%
165	**Reserve Area** names are spelt correctly and avoid other detail Boundary descriptions are present where symbology is absent	Full Population	2%
166	**Descriptive Notes** are wholly in lower case	Sample	5%
167	**Linear feature names** do not extend into bleeds	Full Population	1%

TEST NO	CHECK	TEST TYPE	AQL
168	**Linear feature names** in bleeds are not broken	Full Population	1%
169	**Labelled and named features** have the correct font and point size	Sample Area	5%
170	**Road names** are correct for continuity and point size	Sample	5%
171	**Railway names** are correct for continuity and point size	Sample	5%
172	**Distances** between **pins** on roads are correct (note pins are **not** to be on separate sheets)	Sample	2%
173	**Pins** are clearly visible and in the correct position	Sample	2%
174	**National and state route markers** have the correct value and are centred over the road	Sample	2%
175	**Horizontal control point** identification is correct (ie. either height, topo feature name or alphanumeric identifier shown as per criteria)	Sample	2%
176	Spelling (and name order) of **major and well known features**, such as roads, rivers and localities is correct	Full Population	0%
177	Correct case used on named features, such as homesteads etc	Sample	2%
178	No extraneous type (not associated with a feature or incomplete) has been shown	Full Population	0%
179	Positioning of type conforms to the type placement principles	Sample	5%
	Hydrographic		
180	Names of **rivers** and **creeks** are correct for spelling, continuity and type size, both internally and to adjoining sheets	Sample	5%
181	Names of **Lakes** and other **area features** are correct for spelling, type size and position	Sample	5%
182	**Ocean** and **Sea** names are correct	Full Population	0%
	Grid		
185	Full **grid values** are shown at the south west corner of the sheet	Full Population	0%
186	Internal laddered **grid values** are correct and shown	Full Population	0%
187	**100 000 metre square identification** Letters are correctly positioned around the “0” value grid lines both inside and or outside the neatline	Full Population	0%

TEST NO	CHECK	TEST TYPE	AQL
188	**100 000m UTM grid zone designation note (aligned along grid)** UTM zone values are correct	Full Population	0%
	Relief		
190	**Spot elevations** and **trig values** agree with contours and depression contours	Sample	2%
191	**Contour values** are correct, of sufficient density and read uphill	Sample Area	1%
192	The **highest elevation** (including the bleed area) has been shown (1:250K only)		0%

2.2.4 Black Detail Internal

Internal Black Detail includes all map features that are to be depicted with black symbology.

TEST NO	CHECK	TEST TYPE	AQL
	General		
195	Features meet the neatline on the Western and Southern edges where appropriate	Sample	1%
196	The final text is not cluttered or ambiguous of content	Sample Area	5%
197	Features that appear on previous edition appear on map as specified	Sample Area	2%
198	All source materials have been used to ensure revision has been carried out and accuracy requirements met	Sample	1%
199	Symbology is correct for all features and appears only where appropriate	Sample	1%
200	Symbols do not clash with type or other symbols	Sample Area	5%
201	Annotations missing symbols or symbols missing annotations	Sample Area	5%
	Rail		
205	**Railways** are correct	Full Population	1%

TEST NO	CHECK	TEST TYPE	AQL
206	**Railway stations** are correct	Full Population	5%
207	**Stations** and **bridges** are coincident with railway line	Full Population	5%
208	Correct **gauge** is shown	Full Population	5%
209	**Symbology** is correct for all railway line and point features	Full Population	1%
210	**Railways** are displaced for hydrographic features	Sample Area	5%
	Landing Grounds		
215	All **registered Airports** and **Aerodromes** are correctly shown and labelled (Enroute supplement Australia)	Full Population	1%
216	**Direction of runways** for Aircraft facilities is correct	Sample	5%
217	**Symbology** is correct for line weight, pattern and colour	Sample	1%
	Relief		
220	**Trig symbols** are correctly orientated	Sample	2%
221	**Trig symbols** and **spot elevations** are positioned accurately between contours	Sample	2%
222	Only permanently marked and monumented **horizontal control points** are shown	Sample	2%
223	**Coastline** is broken (symbolised to '0') on **map** where coincident with cliffs	Sample	5%
224	**Contours** are broken (symbolised to '0') on **map** where coincident with cliffs	Sample	5%
225	**Cuttings** and **Embankments** are correctly aligned to roads/railways	Full Population	5%
	Graticule		
228	Symbology for **Graticule** correct	Full Population	0%

2.2.5 General Cultural Detail

TEST NO	CHECK	TEST TYPE	AQL
230	**Buildings** and **homesteads** don't fall on roads or railways or within waterbodies, sea or watercourse areas	Sample Area	5%
231	**Bridges** are **coincident** with roads or rails and traverse streams	Sample	5%
232	**Fences** don't run through vehicle tracks	Sample	5%
233	**Fences, bores, tanks, windpumps,** and **wells** only appear within specified areas, see Appendix C	Full Population	0%
234	**Fences** are labelled where appropriate eg. dog proof fence	Sample Area	5%
235	**Gates** and **grids** are correctly aligned to fences and centred on roads	Sample Area	5%
236	**Fences** do not continue through symbolised yards	Sample Area	5%
237	**Locks** are aligned correctly and centred on streams	Full Population	5%
238	Powerline Pylon symbol **orientation** is correct (250K only – *100K symbol does not include Pylons)* **Powerlines** are not shown within built up areas	Sample	5%
239	**Windpumps** and **mines** have correct orientation	Sample	1%
240	**Wharves** are parallel to the coast	Full Population	5%
241	Orientation of **tunnels** and linear features disappearing underground	Full Population	5%
242	Features that appear on previous edition appear on map as specified	Sample Area	2%
243	**Ferry routes** are shown and labelled	Full Population	2%
244	**Large buildings** are shown to scale	Full Population	5%
245	**Homestead** names are correct	Sample Area	5%
246	**Buildings** or other cultural features do not fall in built-up areas	Sample Area	5%

2.2.6 Red Detail Internal

Internal Red Detail includes all map features that are to be depicted with red symbology.

TEST NO	CHECK	TEST TYPE	AQL
	Roads		
250	Road **classification** is correct	Sample Area	5%
252	**Intersections** between different road classifications are clear of artefacts and undershoots, particularly road_principle to vehicle_track	Sample Area	5%
253	**Major roads** continue through built-up areas. **Minor roads** totally contained in built-up areas have not been shown.	Sample Area	5%
254	Roads are abutting reserve area boundaries where applicable	Sample Area	5%
255	Roads are abutting built up area boundaries where applicable	Sample Area	5%
256	**Distance markers** appear at end of the value	Sample	1%
257	**Roads** are **displaced** for railways, rivers etc.	Sample	5%
258	**National** and **State route markers** are cleared of all detail	Sample	1%
259	Features that appear on previous edition appear on map as specified	Sample Area	2%
260	All source materials have been used to ensure revision has been carried out and accuracy requirements met	Sample	1%
261	Symbology is correct for all road line and point features	Sample	1%
	Built Up Area		
265	Boundaries don't overlap into other polygons, including - waterbodies, vegetation areas, relief areas, offshore etc.	Full Population	1%
266	Polygon boundary is coincident with roads where necessary	Sample Area	5%
267	Features that appear on previous edition appear on map as specified	Sample Area	2%

TEST NO	CHECK	TEST TYPE	AQL
268	All source materials have been used to ensure revision has been carried out and accuracy requirements met	Sample	1%
269	Symbology is correct for all Built up areas and populated places	Full Population	1%

2.2.7 Blue Detail Internal

Internal Blue Detail includes all map features that are to be depicted with blue symbology.

TEST NO	CHECK	TEST TYPE	AQL
276	The **grid** meets the neatline and fits the graticule	Full Population	0%
277	**Waterbodies** do not overlap other area features eg. built up areas	Sample	5%
278	Orientation of **flow arrow heads** is correct	Sample	5%
279	Orientation of **rapids symbols** are correct	Sample	5%
280	**Minor streams** and **channels** fit the road pattern **Streams** don't flow down roads, **Confluences** don't occur on roads	Sample Area	5%
281	Features that appear on previous edition appear on map as specified	Sample Area	2%
282	All source materials have been used to ensure revision has been carried out and accuracy requirements met	Sample	1%
283	Symbology is correct for all features and appears only where appropriate	Sample	1%
284	Symbology of waterbodies is correct with relation to perenniality	Sample Area	5%
	Offshore		
290	**Reef polygons** are contained completely within the sea	Full Population	1%
291	**Reefs** are named where appropriate	Sample	2%
292	Features that appear on previous edition appear on map as specified	Sample Area	2%
293	All source materials have been used to ensure revision has been carried out and accuracy requirements met	Sample	1%
294	Symbology of offshore area and point features is correct	Sample	1%

TEST NO	CHECK	TEST TYPE	AQL
	Grid		
297	Correct symbology for **grid lines** (10 000m and 100 000m)	Full population	0%

2.2.8 Brown Detail Internal

Internal Brown Detail includes all map features that are to be depicted with brown symbology.

TEST NO	CHECK	TEST TYPE	AQL
300	**Sand** does not appear in vegetated areas, waterbodies and braided watercourses	Full Population	5%
301	**Sand ridges** are identified by descriptive notes and average heights where available	Sample	5%
302	**Sand ridges** do not cross streams	Sample	1%
303	**Sand ridges** do not enter lakes	Sample	1%
304	Features that appear on previous edition appear on map as specified	Sample Area	2%
305	All source materials have been used to ensure revision has been carried out and accuracy requirements met	Sample	1%
306	Symbology for sand, foreshore flats and sand ridges is correct	Sample	1%
	Contours		
310	**Index contours** exist and are drawn with the correct symbology	Sample Area	1%
311	**Depression contours** and **depression ticks** are orientated correctly	Sample	5%
312	**Contours** are broken for double line perennial watercourses, open-cut mines and cliffs	Sample	5%
313	Features that appear on previous edition appear on map as specified	Sample Area	2%
314	All source materials have been used to ensure revision has been carried out and accuracy requirements met	Sample	1%
315	Check symbology for contours is correct	Sample	1%

2.2.9 Green Detail Internal

Internal Green Detail includes all map features that are to be depicted with green symbology.

TEST NO	CHECK	TEST TYPE	AQL
	Vegetation		
320	**Vegetation** does not overlap into perennial waterbodies, built-up areas, relief areas etc.	Full Population	5%
321	**Windbreaks** do not cross roads or perennial waterbodies	Full Population	1%
322	**Vegetation** has been updated and captured in sufficient detail	Sample Area	5%
323	Features that appear on previous edition appear on map as specified	Sample Area	2%
324	All source materials have been used to ensure revision has been carried out and accuracy requirements met	Sample	1%
325	Symbology for all vegetation features is correct	Sample	1%
	Boundaries		
330	**Boundaries** are abutting roads and other boundaries where appropriate	Sample	5%
331	**State Border** is labelled both sides	Full Population	1%
332	The **verge** falls on the inside of Reserve Area boundaries	Sample	2%
333	Features that appear on previous edition appear on map as specified	Sample Area	2%
334	All source materials have been used to ensure revision has been carried out and accuracy requirements met	Sample	1%
335	Symbology for all reserve area boundaries are correct	Sample	1%
336	**Reserve** area lines are not symbolised where coincident with coastline	Sample	5%
337	**Reserve** area line symbology is correctly offset	Sample	2%

2.2.10 Composite Screens / Patterns

A number of area features are made up of composite screens and/or different colour or

patterns. Checks will be carried out against the appropriate specification.

TEST NO	CHECK	TEST TYPE	AQL
340	**Area features** made up of composite screens/patterns or different colours are correct. eg. Forests, Rainforest,Parks, Mangroves, Orchards & Pine Plantations etc.	Sample	0%

3. FORMS FOR VAT SUBMISSION

On the following pages are the VAT submission form and attachments J1, J2 and J3 for the 1:250 000 and 1:100 000 scale products. These forms will be completed by producers and submitted to VAT with all the specified material.

250K VAT SUBMISSION FORM

TILE NO:..... TILE NAME:..... DATE:.....PHONE.....

COMPANY:..... CONTACT NAME:.....

PREVIOUS MAP **NTMS / JOG**

Has this map/tile been previously submitted? ..... Date: .....

Elevation range for spot heights and survey marks: Min..... to **Max.....** metres

Has Imagery been used ? [Yes**]**

Dates of Imagery: Spot ..... / ..... Landsat .....
..... / ....
..... / ....

Version and Amendment number of Technical Specifications used for this map/tile .....

Include with your submission:

1. Repromat for map production
2. One hard copy chemical proof of the map
3. The Working Database
4. TOPO-250K GEODATA
5. All source materials supplied including remote sensed imagery, revision information (ie. maps, plans, listings etc), repromat and project files
6. Listing of Working Database coverages
7. Listing of GEODATA coverages
8. Printout of TQI (tile quality information) table for each coverage
9. Printout of FRQ (frequency) table for each coverage
10. Printout of UFI range for each theme
11. Printout of the DQT (Data Quality Table)
12. Listing of sources used for attribute information and their reliability date - 'Attachment J1'
13. Listing of sources used for feature positioning and their reliability date - 'Attachment J2'
14. Listing of comments about production or revision - 'Attachment J3'
15. Scanning transformation RMS error report(s) for all newly scanned data
16. Digital listing of Production Notes to be supplied

Signed: .....

100K VAT SUBMISSION FORM

TILE NO:..... TILE NAME:..... DATE:.....PHONE.....

COMPANY:..... CONTACT NAME:.....

PREVIOUS MAP **NTMS / RASC**

Has this map/tile been previously submitted? ..... Date: .....

Elevation range for spot heights and survey marks: Min..... to **Max.....** metres

Has Imagery been used ? [Yes**]**

Dates of Imagery: Spot ..... / ..... Landsat .....
..... / ....
..... / ....

Version and Amendment number of Technical Specifications used for this map/tile .....

Include with your submission:

1. Repromat for map production
2. One hard copy chemical proof of the map
3. The Working Database
4. TOPO-100K GEODATA
5. All source materials supplied including remote sensed imagery, revision information (ie. maps, plans, listings etc), repromat and project files
6. Listing of Working Database coverages
7. Listing of GEODATA coverages
8. Printout of TQI (tile quality information) table for each coverage
9. Printout of FRQ (frequency) table for each coverage
10. Printout of the DQT (Data Quality Table)
11. Listing of sources used for attribute information and their reliability date - 'Attachment J1'
12. Listing of sources used for feature positioning and their reliability date - 'Attachment J2'
13. Listing of comments about production or revision - 'Attachment J3'
14. Scanning transformation RMS error report(s) for all newly scanned data
15. Digital listing of Production Notes to be supplied

Signed: .....

ATTACHMENT J1 (250K)

Indicate below the **source materials** used Tick appropriate boxes where applicable

SOURCES USED FOR FEATURE POSITIONING				
COVERAGE	**IMAGERY**	**250K REPROMAT**	**OTHER SOURCES AAA etc.**	**DATE**
Aeronautical Point	❒	❒	.....	.....
Buildings Area	❒	❒	.....	.....
Buildings Point	❒	❒	.....	.....
Builtup Areas	❒	❒	.....	.....
Carto Features	❒	❒	.....	.....
Contours	❒	❒	.....	.....
Drainage	❒	❒	.....	.....
Framework	❒	❒	.....	.....
Localities	❒	❒	.....	.....
Marine Facilities	❒	❒	.....	.....
Morphology	❒	❒	.....	.....
Navigation	❒	❒	.....	.....
Offshore	❒	❒	.....	.....
Pipelines	❒	❒	.....	.....
Powerlines	❒	❒	.....	.....
Rail Transport	❒	❒	.....	.....
Relief Area	❒	❒	.....	.....
Reserved Areas	❒	❒	.....	.....
Road Transport	❒	❒	.....	.....
Sand Ridges	❒	❒	.....	.....
Security Areas	❒	❒	.....	.....
Seismic Lines	❒	❒	.....	.....
Spot Heights	❒	❒	.....	.....
Survey Marks	❒	❒	.....	.....
Utilities	❒	❒	.....	.....
Vegetation	❒	❒	.....	.....
Vegetation Misc	❒	❒	.....	.....
Waterbodies	❒	❒	.....	.....
Waterpoints	❒	❒	.....	.....

ATTACHMENT J2 (250K)

Indicate below the **source materials** used Tick appropriate boxes where applicable

SOURCES USED FOR ATTRIBUTE INFORMATION			
COVERAGE	**250K REPROMAT**	**OTHER SOURCES AAA ERS etc.**	**DATE**
Aeronautical Point	❒	.....	.....
Buildings Area	❒	.....	.....
Buildings Point	❒	.....	.....
Builtup Areas	❒	.....	.....
Carto Features	❒	.....	.....
Contours	❒	.....	.....
Drainage	❒	.....	.....
Framework	❒	.....	.....
Localities	❒	.....	.....
Marine Facilities	❒	.....	.....
Morphology	❒	.....	.....
Navigation	❒	.....	.....
Offshore	❒	.....	.....
Pipelines	❒	.....	.....
Powerlines	❒	.....	.....
Rail Transport	❒	.....	.....
Relief Area	❒	.....	.....
Reserved Areas	❒	.....	.....
Road Transport	❒	.....	.....
Sand Ridges	❒	.....	.....
Security Areas	❒	.....	.....
Seismic Lines	❒	.....	.....
Spot Heights	❒	.....	.....
Survey Marks	❒	.....	.....
Utilities	❒	.....	.....
Vegetation	❒	.....	.....
Vegetation Misc	❒	.....	.....
Waterbodies	❒	.....	.....
Waterpoints	❒	.....	.....

ATTACHMENT J1 (100K)

Indicate below the **source materials** used Tick appropriate boxes where applicable

SOURCES USED FOR FEATURE POSITIONING				
COVERAGE	**IMAGERY**	**100K REPROMAT**	**OTHER SOURCES AAA etc.**	**DATE**
Aeronautical Point	❒	❒	.....	.....
Auxiliary Contours	❒	❒	.....	.....
Buildings Area	❒	❒	.....	.....
Buildings Point	❒	❒	.....	.....
Builtup Areas	❒	❒	.....	.....
Carto Features	❒	❒	.....	.....
Contours	❒	❒	.....	.....
Drainage	❒	❒	.....	.....
Framework	❒	❒	.....	.....
Localities	❒	❒	.....	.....
Marine Facilities	❒	❒	.....	.....
Morphology	❒	❒	.....	.....
Navigation	❒	❒	.....	.....
Offshore	❒	❒	.....	.....
Pipelines	❒	❒	.....	.....
Powerlines	❒	❒	.....	.....
Rail Transport	❒	❒	.....	.....
Relief Area	❒	❒	.....	.....
Reserved Areas	❒	❒	.....	.....
Road Transport	❒	❒	.....	.....
Sand Ridges	❒	❒	.....	.....
Security Areas	❒	❒	.....	.....
Seismic Lines	❒	❒	.....	.....
Spot Heights	❒	❒	.....	.....
Survey Marks	❒	❒	.....	.....
Utilities	❒	❒	.....	.....
Vegetation	❒	❒	.....	.....
Vegetation Misc	❒	❒	.....	.....
Waterbodies	❒	❒	.....	.....
Waterpoints	❒	❒	.....	.....

ATTACHMENT J2 (100K)

Indicate below the **source materials** used Tick appropriate boxes where applicable

SOURCES USED FOR ATTRIBUTE INFORMATION			
COVERAGE	**100K REPROMAT**	**OTHER SOURCES AAA ERS etc.**	**DATE**
Aeronautical Point	❒	.....	.....
Auxiliary Contours	❒	.....	.....
Buildings Area	❒	.....	.....
Buildings Point	❒	.....	.....
Builtup Areas	❒	.....	.....
Carto Features	❒	.....	.....
Contours	❒	.....	.....
Drainage	❒	.....	.....
Framework	❒	.....	.....
Localities	❒	.....	.....
Marine Facilities	❒	.....	.....
Morphology	❒	.....	.....
Navigation	❒	.....	.....
Offshore	❒	.....	.....
Pipelines	❒	.....	.....
Powerlines	❒	.....	.....
Rail Transport	❒	.....	.....
Relief Area	❒	.....	.....
Reserved Areas	❒	.....	.....
Road Transport	❒	.....	.....
Sand Ridges	❒	.....	.....
Security Areas	❒	.....	.....
Seismic Lines	❒	.....	.....
Spot Heights	❒	.....	.....
Survey Marks	❒	.....	.....
Utilities	❒	.....	.....
Vegetation	❒	.....	.....
Vegetation Misc	❒	.....	.....
Waterbodies	❒	.....	.....

Waterpoints	❒	.....	.....

ATTACHMENT J3

COMMENTS ABOUT PRODUCTION OR REVISION

COVERAGE	FEATURE CLASS	IDENTIFIER/ REFERENCE	COMMENTS	DATE
……….…………..	…..…………..	….………..	…………………………………………………….	………..
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4. VAT TEST TO REPORT NUMBER CROSS-REFERENCE

Test numbers that do not have a matching report number are unused.

Test No	Report No
1	70
2	71/72
3	52/53
4	73
5	90
6	91
7	92
8	75
9	99
10	79
11	101
12	97
13	93
14	95
15	83
16	85
17	84
18	86
19	77
20	78
21	81
22	82
23	89
24	105
25	107
26	108
27	109
28	110
29	113
30	111
31	114
32	115
33	103
34	88
35	96
36	98
37	102
38	-
39	-
40	4/5
41	4/5
42	6/7
43	6/7
44	9
45	17
46	-
47	14
48	15
49	54
50	16

Test No	Report No
51	17
52	18
53	19
54	24
55	20
56	21
57	22
58	23
59	26
60	30
61	36
62	29
63	31
64	33
65	34
66	35
67	58
68	39
69	43
70	74/76
71	46
72	47
73	42
74	10
75	61
76	40
77	48
78	38
79	49
80	104
81	50
82	44
83	41
84	45
85	51
86	60
87	25
88	27
89	121
90	122
91	120
92	1
93	2
94	3
95	28
96	32
97	37
98	55
99	56
100	57

Test No	Report No
101	-
102	-
103	-
104	-
105	-
106	62
107	63
108	12
109	123
110	-
111	-
112	-
113	-
114	-
115	-
116	-
117	-
118	-
119	-
120	140
121	141
122	142
123	144
124	145
125	-
126	-
127	-
128	-
129	-
130	151
131	152
132	153
133	154
134	155
135	156
136	157
137	158
138	159
139	160
140	161
141	162
142	173
143	163
144	164
145	165
146	166
147	167
148	168
149	169
150	170

Test No	Report No
151	171
152	172
153	-
154	-
155	-
156	-
157	-
158	-
159	-
160	300
161	301
162	216
163	303
164	304
165	289
166	305
167	306
168	307
169	308
170	192
171	205
172	193
173	194
174	190
175	251
176	310
177	309
178	312
179	302
180	238
181	237
182	236
183	-
184	-
185	170
186	177
187	178
188	179
189	-
190	49
191	259
192	253
193	-
194	-
195	315
196	302
197	234/316
198	317
199	235/318
200	320

Test No	Report No
201	321
202	-
203	-
204	-
205	200
206	202
207	34
208	201
209	206
210	203
211	-
212	-
213	-
214	-
215	215
216	217
217	218
218	-
219	-
220	267
221	250
222	252
223	245
224	257
225	260
226	-
227	-
228	180
229	-
230	227
231	230
232	224
233	223
234	225
235	226
236	224
237	233
238	220
239	231
240	29
241	221
242	234
243	222
244	229
245	228
246	232
247	-
248	-
249	-
250	185

Test No	Report No
251	-
252	20/22
253	187
254	286
255	188
256	195
257	189
258	191
259	196
260	317
261	197
262	-
263	-
264	-
265	210
266	211
267	212
268	317
269	213
270	-
271	-
272	-
273	-
274	-
275	-
276	175
277	239
278	243
279	224
280	241
281	246
282	317
283	247
284	101
285	-
286	-
287	-
288	-
289	-
290	42
291	296
292	297
293	317
294	298
295	-
296	-
297	176
298	-
299	-
300	261

Test No	Report No
301	262
302	263
303	44
304	266
305	317
306	269
307	-
308	-
309	-
310	254
311	255
312	256
313	266
314	317
315	268
316	-
317	-
318	-
319	-
320	276
321	277
322	278
323	279
324	317
325	280
326	-
327	-
328	-
329	-
330	286
331	285
332	291
333	290
334	317
335	291
336	287
337	288
338	-
339	-
340	319
341	-
342	-
343	-
344	-
345	-
346	-
347	-
348	-
349	-
350	-

5. VAT REPORT TO TEST NUMBER CROSS-REFERENCE

Report numbers that do not have a matching test number are unused.

Report No	Test No
1	92
2	93
3	94
4	40/41
5	40/41
6	42/43
7	42/43
8	-
9	44
10	74
11	-
12	108
13	-
14	47
15	48
16	50
17	45/51
18	52
19	53
20	55/252
21	56
22	57/252
23	58
24	54
25	87
26	59
27	88
28	95
29	62/240
30	60
31	63
32	96
33	64
34	65/207
35	66
36	61
37	97
38	78
39	68
40	76
41	83
42	73/290
43	69
44	82/303
45	84
46	71
47	72
48	77
49	79/190
50	81

Report No	Test No
51	85
52	3
53	3
54	49
55	98
56	99
57	100
58	67
59	-
60	86
61	75
62	106
63	107
64	-
65	-
66	-
67	-
68	-
69	-
70	1
71	2
72	2
73	4
74	70
75	8
76	70
77	19
78	20
79	10
80	-
81	21
82	22
83	15
84	17
85	16
86	18
87	-
88	34
89	23
90	5
91	6
92	7
93	13
94	-
95	14
96	35
97	12
98	36
99	9
100	-

Report No	Test No
101	11/284
102	37
103	33
104	80
105	24
106	-
107	25
108	26
109	27
110	28
111	30
112	-
113	29
114	31
115	32
116	-
117	-
118	-
119	-
120	91
121	89
122	90
123	109
124	-
125	-
126	-
127	-
128	-
129	-
130	-
131	-
132	-
133	-
134	-
135	-
136	-
137	-
138	-
139	-
140	120
141	121
142	122
143	-
144	123
145	124
146	-
147	-
148	-
149	-
150	-

Report No	Test No
151	130
152	131
153	132
154	133
155	134
156	135
157	136
158	137
159	138
160	139
161	140
162	141
163	143
164	144
165	145
166	146
167	147
168	148
169	149
170	150/185
171	151
172	152
173	142
174	-
175	276
176	297
177	186
178	187
179	188
180	228
181	-
182	-
183	-
184	-
185	250
186	-
187	253
188	255
189	257
190	174
191	258
192	170
193	172
194	173
195	256
196	259
197	261
198	-
199	-
200	205

Report No	Test No
201	208
202	206
203	210
204	-
205	171
206	209
207	-
208	-
209	-
210	265
211	266
212	267
213	269
214	-
215	215
216	162
217	216
218	217
219	-
220	238
221	241
222	243
223	233
224	232/236/279
225	234
226	235
227	230
228	245
229	244
230	231
231	239
232	246
233	237
234	197/242
235	199
236	182
237	181
238	180
239	277
240	-
241	280
242	-
243	278
244	-
245	223
246	281
247	283
248	-
249	-
250	221

Report No	Test No
251	175
252	222
253	192
254	310
255	310
256	312
257	224
258	-
259	191
260	225
261	300
262	301
263	302
264	-
265	-
266	304/313
267	220
268	315
269	306
270	-
271	-
272	-
273	-
274	-
275	-
276	320
277	321
278	322
279	323
280	325
281	-
282	-
283	-
284	-
285	331
286	254/330
287	336
288	337
289	165
290	333
291	332/335
292	-
293	-
294	-
295	-
296	291
297	292
298	294
299	-
300	160

Report No	Test No
301	161
302	179/196
303	163
304	164
305	166
306	167
307	168
308	169
309	177
310	176
311	-
312	178
313	-
314	-
315	195
316	197
317	198
318	199
319	340
320	200
321	201
322	-
323	-
324	-
325	-
326	-
327	-
328	-
329	-
330	-
331	-
332	-
333	-
334	-
335	-
336	-
337	-
338	-
339	-
340	-
341	-
342	-
343	-
344	-
345	-
346	-
347	-
348	-
349	-
350	-

Appendix K - UFI Ranges for 1:250 000 GEODATA Tiles

UFI Ranges for 1:250 000 GEODATA tiles

This table gives the legal range of UFI numbers for a tile. Some tile numbers may not be used. Where a tile has been extended the UFI range will be the UFI range for the tile's number rather than the ranges for any standard map areas covered (see Appendix H). Tiles are sorted by map code.

MAP CODE	UFI	
	Start	End
C5216	40800001	40900000
C5313	40900001	41000000
C5316	41200001	41300000
C5407	41300001	41400000
C5408	41400001	41500000
C5411	41500001	41600000
C5412	41600001	41700000
C5415	41700001	41800000
C5416	41800001	41900000
C5505	41900001	42000000
D5112	42200001	42300000
D5115	42300001	42400000
D5116	42400001	42500000
D5204	42600001	42700000
D5205	42700001	42800000
D5207	42800001	42900000
D5208	42900001	43000000
D5209	43000001	43100000
D5210	43100001	43200000
D5211	43200001	43300000
D5212	43300001	43400000
D5213	43400001	43500000
D5214	43500001	43600000
D5215	43600001	43700000
D5216	43700001	43800000
D5301	43800001	43900000
D5302	43900001	44000000
D5303	44000001	44100000
D5304	44100001	44200000
D5305	44200001	44300000
D5306	44300001	44400000

MAP CODE	UFI	
	Start	End
D5307	44400001	44500000
D5308	44500001	44600000
D5309	44600001	44700000
D5310	44700001	44800000
D5311	44800001	44900000
D5313	45000001	45100000
D5314	45100001	45200000
D5315	45200001	45300000
D5403	45400001	45500000
D5404	45500001	45600000
D5408	45700001	45800000
D5411	45800001	45900000
D5412	45900001	46000000
D5415	46000001	46100000
D5416	46100001	46200000
D5509	46200001	46300000
D5513	46300001	46400000
E5102	46500001	46600000
E5103	46600001	46700000
E5104	46700001	46800000
E5106	46800001	46900000
E5107	46900001	47000000
E5108	47000001	47100000
E5110	47100001	47200000
E5111	47200001	47300000
E5112	47300001	47400000
E5113	47400001	47500000
E5114	47500001	47600000
E5115	47600001	47700000
E5116	47700001	47800000
E5201	47800001	47900000
E5202	47900001	48000000
E5203	48000001	48100000
E5204	48100001	48200000
E5205	48200001	48300000
E5206	48300001	48400000
E5207	48400001	48500000

MAP CODE	UFI	
	Start	End
E5208	48500001	48600000
E5209	48600001	48700000
E5210	48700001	48800000
E5211	48800001	48900000
E5212	48900001	49000000
E5213	49000001	49100000
E5214	49100001	49200000
E5215	49200001	49300000
E5216	49300001	49400000
E5301	49400001	49500000
E5302	49500001	49600000
E5303	49600001	49700000
E5304	49700001	49800000
E5305	49800001	49900000
E5306	49900001	50000000
E5307	50000001	50100000
E5308	50100001	50200000
E5309	50200001	50300000
E5310	50300001	50400000
E5311	50400001	50500000
E5312	50500001	50600000
E5313	50600001	50700000
E5314	50700001	50800000
E5315	50800001	50900000
E5316	50900001	51000000
E5401	51000001	51100000
E5403	51200001	51300000
E5404	51300001	51400000
E5405	51400001	51500000
E5406	51500001	51600000
E5407	51600001	51700000
E5408	51700001	51800000
E5409	51800001	51900000
E5410	51900001	52000000
E5411	52000001	52100000
E5412	52100001	52200000
E5413	52200001	52300000

MAP CODE	UFI	
	Start	End
E5414	52300001	52400000
E5415	52400001	52500000
E5416	52500001	52600000
E5501	52600001	52700000
E5502	52700001	52800000
E5505	52800001	52900000
E5506	52900001	53000000
E5509	53000001	53100000
E5510	53100001	53200000
E5513	53200001	53300000
E5514	53300001	53400000
E5515	53400001	53500000
F4916	53600001	53700000
F5002	53800001	53900000
F5003	53900001	54000000
F5004	54000001	54100000
F5005	54100001	54200000
F5006	39200001	39300000
F5007	39300001	39400000
F5008	39400001	39500000
F5009	39500001	39600000
F5010	39600001	39700000
F5011	39700001	39800000
F5012	39800001	39900000
F5013	39900001	40000000
F5014	40000001	40100000
F5015	40100001	40200000
F5016	40200001	40300000
F5101	40300001	40400000
F5102	40400001	40500000
F5103	40500001	40600000
F5104	40600001	40700000
F5105	23200001	23300000
F5106	23300001	23400000
F5107	23400001	23500000
F5108	23500001	23600000
F5109	23600001	23700000

MAP CODE	UFI	
	Start	End
F5110	23700001	23800000
F5111	23800001	23900000
F5112	23900001	24000000
F5113	24000001	24100000
F5114	24100001	24200000
F5115	24200001	24300000
F5116	24300001	24400000
F5201	24400001	24500000
F5202	24500001	24600000
F5203	24600001	24700000
F5204	24700001	24800000
F5205	24800001	24900000
F5206	24900001	25000000
F5207	25000001	25100000
F5208	25100001	25200000
F5209	25200001	25300000
F5210	25300001	25400000
F5211	25400001	25500000
F5212	25500001	25600000
F5213	25600001	25700000
F5214	25700001	25800000
F5215	25800001	25900000
F5216	25900001	26000000
F5301	26000001	26100000
F5302	26100001	26200000
F5303	26200001	26300000
F5304	26300001	26400000
F5305	26400001	26500000
F5306	26500001	26600000
F5307	26600001	26700000
F5308	26700001	26800000
F5309	26800001	26900000
F5310	26900001	27000000
F5311	27000001	27100000
F5312	27100001	27200000
F5313	27200001	27300000
F5314	27300001	27400000

MAP CODE	UFI	
	Start	End
F5315	27400001	27500000
F5316	27500001	27600000
F5401	27600001	27700000
F5402	27700001	27800000
F5403	27800001	27900000
F5404	27900001	28000000
F5405	28000001	28100000
F5406	28100001	28200000
F5407	28200001	28300000
F5408	28300001	28400000
F5409	28400001	28500000
F5410	28500001	28600000
F5411	28600001	28700000
F5412	28700001	28800000
F5413	28800001	28900000
F5414	28900001	29000000
F5415	29000001	29100000
F5416	29100001	29200000
F5501	29200001	29300000
F5502	29300001	29400000
F5503	29400001	29500000
F5504	29500001	29600000
F5505	29600001	29700000
F5506	29700001	29800000
F5507	29800001	29900000
F5508	29900001	30000000
F5509	30000001	30100000
F5510	30100001	30200000
F5511	30200001	30300000
F5512	30300001	30400000
F5513	30400001	30500000
F5514	30500001	30600000
F5515	30600001	30700000
F5516	30700001	30800000
F5605	30800001	30900000
F5609	30900001	31000000
F5613	31000001	31100000

MAP CODE	UFI	
	Start	End
F5614	31100001	31200000
G4904	31200001	31300000
G4912	31400001	31500000
G5001	31500001	31600000
G5002	31600001	31700000
G5003	31700001	31800000
G5004	31800001	31900000
G5005	31900001	32000000
G5006	32000001	32100000
G5007	32100001	32200000
G5008	32200001	32300000
G5009	32300001	32400000
G5010	32400001	32500000
G5011	32500001	32600000
G5012	32600001	32700000
G5013	32700001	32800000
G5014	32800001	32900000
G5015	32900001	33000000
G5016	33000001	33100000
G5101	33100001	33200000
G5102	33200001	33300000
G5103	33300001	33400000
G5104	33400001	33500000
G5105	33500001	33600000
G5106	33600001	33700000
G5107	33700001	33800000
G5108	33800001	33900000
G5109	33900001	34000000
G5110	34000001	34100000
G5111	34100001	34200000
G5112	34200001	34300000
G5113	34300001	34400000
G5114	34400001	34500000
G5115	34500001	34600000
G5116	34600001	34700000
G5201	34700001	34800000
G5202	34800001	34900000

MAP CODE	UFI	
	Start	End
G5203	34900001	35000000
G5204	35000001	35100000
G5205	35100001	35200000
G5206	35200001	35300000
G5207	35300001	35400000
G5208	35400001	35500000
G5209	35500001	35600000
G5210	35600001	35700000
G5211	35700001	35800000
G5212	35800001	35900000
G5213	35900001	36000000
G5214	36000001	36100000
G5215	36100001	36200000
G5216	36200001	36300000
G5301	36300001	36400000
G5302	36400001	36500000
G5303	36500001	36600000
G5304	36600001	36700000
G5305	36700001	36800000
G5306	36800001	36900000
G5307	36900001	37000000
G5308	37000001	37100000
G5309	37100001	37200000
G5310	37200001	37300000
G5311	37300001	37400000
G5312	37400001	37500000
G5313	37500001	37600000
G5314	37600001	37700000
G5315	37700001	37800000
G5316	37800001	37900000
G5401	37900001	38000000
G5402	38000001	38100000
G5403	38100001	38200000
G5404	38200001	38300000
G5405	38300001	38400000
G5406	38400001	38500000
G5407	38500001	38600000

MAP CODE	UFI	
	Start	End
G5408	38600001	38700000
G5409	38700001	38800000
G5410	38800001	38900000
G5411	38900001	39000000
G5412	39000001	39100000
G5413	39100001	39200000
G5414	07200001	07300000
G5415	07300001	07400000
G5416	07400001	07500000
G5501	07500001	07600000
G5502	07600001	07700000
G5503	07700001	07800000
G5504	07800001	07900000
G5505	07900001	08000000
G5506	08000001	08100000
G5507	08100001	08200000
G5508	08200001	08300000
G5509	08300001	08400000
G5510	08400001	08500000
G5511	08500001	08600000
G5512	08600001	08700000
G5513	08700001	08800000
G5514	08800001	08900000
G5515	08900001	09000000
G5516	09000001	09100000
G5601	09100001	09200000
G5602	09200001	09300000
G5603	10000001	10100000
G5605	09300001	09400000
G5606	09400001	09500000
G5609	09500001	09600000
G5610	09600001	09700000
G5613	09700001	09800000
G5614	09800001	09900000
G5615	09900001	10000000
H5001	10100001	10200000
H5002	10200001	10300000

MAP CODE	UFI	
	Start	End
H5003	10300001	10400000
H5004	10400001	10500000
H5005	10500001	10600000
H5006	10600001	10700000
H5007	10700001	10800000
H5008	10800001	10900000
H5009	10900001	11000000
H5010	11000001	11100000
H5011	11100001	11200000
H5012	11200001	11300000
H5014	11300001	11400000
H5015	11400001	11500000
H5016	11500001	11600000
H5101	11600001	11700000
H5102	11700001	11800000
H5103	11800001	11900000
H5104	11900001	12000000
H5105	12000001	12100000
H5106	12100001	12200000
H5107	12200001	12300000
H5108	12300001	12400000
H5109	12400001	12500000
H5110	12500001	12600000
H5111	12600001	12700000
H5112	12700001	12800000
H5113	12800001	12900000
H5114	12900001	13000000
H5115	13000001	13100000
H5116	13100001	13200000
H5201	13200001	13300000
H5202	13300001	13400000
H5203	13400001	13500000
H5204	13500001	13600000
H5205	13600001	13700000
H5206	13700001	13800000
H5207	13800001	13900000
H5208	13900001	14000000

MAP CODE	UFI	
	Start	End
H5209	14000001	14100000
H5210	14100001	14200000
H5211	14200001	14300000
H5212	14300001	14400000
H5213	14400001	14500000
H5214	14500001	14600000
H5215	14600001	14700000
H5216	14700001	14800000
H5301	14800001	14900000
H5302	14900001	15000000
H5303	15000001	15100000
H5304	15100001	15200000
H5305	15200001	15300000
H5306	15300001	15400000
H5307	15400001	15500000
H5308	15500001	15600000
H5309	15600001	15700000
H5310	15700001	15800000
H5311	15800001	15900000
H5312	15900001	16000000
H5313	16000001	16100000
H5314	16100001	16200000
H5315	16200001	16300000
H5316	16300001	16400000
H5401	16400001	16500000
H5402	16500001	16600000
H5403	16600001	16700000
H5404	16700001	16800000
H5405	16800001	16900000
H5406	16900001	17000000
H5407	17000001	17100000
H5408	17100001	17200000
H5409	17200001	17300000
H5410	17300001	17400000
H5411	17400001	17500000
H5412	17500001	17600000
H5413	17600001	17700000

MAP CODE	UFI	
	Start	End
H5414	17700001	17800000
H5415	17800001	17900000
H5416	17900001	18000000
H5501	18000001	18100000
H5502	18100001	18200000
H5503	18200001	18300000
H5504	18300001	18400000
H5505	18400001	18500000
H5506	18500001	18600000
H5507	18600001	18700000
H5508	18700001	18800000
H5509	18800001	18900000
H5510	18900001	19000000
H5511	19000001	19100000
H5512	19100001	19200000
H5513	19200001	19300000
H5514	19300001	19400000
H5515	19400001	19500000
H5516	19500001	19600000
H5601	19600001	19700000
H5602	19700001	19800000
H5605	19900001	20000000
H5606	20000001	20100000
H5607	20100001	20200000
H5609	20200001	20300000
H5610	20300001	20400000
H5613	20500001	20600000
H5614	20600001	20700000
I5002	20700001	20800000
I5003	20800001	20900000
I5004	20900001	21000000
I5005	21000001	21100000
I5006	21100001	21200000
I5007	21200001	21300000
I5008	21300001	21400000
I5010	21500001	21600000
I5011	21600001	21700000

MAP CODE	UFI	
	Start	End
I5012	21700001	21800000
I5101	22000001	22100000
I5102	22100001	22200000
I5103	22200001	22300000
I5104	22300001	22400000
I5105	22400001	22500000
I5106	22500001	22600000
I5107	22600001	22700000
I5109	22700001	22800000
I5301	00000001	00100000
I5302	00100001	00200000
I5303	00200001	00300000
I5304	00300001	00400000
I5306	00400001	00500000
I5307	00500001	00600000
I5308	00600001	00700000
I5311	00700001	00800000
I5312	00800001	00900000
I5316	00900001	01000000
I5401	01000001	01100000
I5402	01100001	01200000
I5403	01200001	01300000
I5404	01300001	01400000
I5405	01400001	01500000
I5406	01500001	01600000
I5407	01600001	01700000
I5408	01700001	01800000
I5409	01800001	01900000
I5410	01900001	02000000
I5411	02000001	02100000
I5412	02100001	02200000
I5413	02200001	02300000
I5414	02300001	02400000
I5415	02400001	02500000
I5416	02500001	02600000
I5501	02600001	02700000
I5502	02700001	02800000

MAP CODE	UFI	
	Start	End
I5503	02800001	02900000
I5504	02900001	03000000
I5505	03000001	03100000
I5506	03100001	03200000
I5507	03200001	03300000
I5508	03300001	03400000
I5509	03400001	03500000
I5510	03500001	03600000
I5511	03600001	03700000
I5512	03700001	03800000
I5513	03800001	03900000
I5514	03900001	04000000
I5515	04000001	04100000
I5516	04100001	04200000
I5601	04200001	04300000
I5602	04300001	04400000
I5605	04400001	04500000
I5613	04600001	04700000
J5402	04800001	04900000
J5403	04900001	05000000
J5404	05000001	05100000
J5406	05100001	05200000
J5407	05200001	05300000
J5408	05300001	05400000
J5412	05500001	05600000
J5501	05600001	05700000
J5502	05700001	05800000
J5503	05800001	05900000
J5504	05900001	06000000
J5505	06000001	06100000
J5506	06100001	06200000
J5507	06200001	06300000
J5508	06300001	06400000
J5509	06400001	06500000
J5510	06500001	06600000
TAS NE	06800001	06900000
TAS NW	06900001	07000000

MAP CODE	UFI	
	Start	End
TAS SE	07000001	07100000
TAS SW	07100001	07200000

Appendix L - Glossary

Glossary

Abandoned	A feature, which is no longer in normal use and is not maintained. Future use is not anticipated, although operations could possibly be resumed after repair. The term is applied to roads, railways and airfields, quarries etc. all of which, although not immediately useable for the original purpose, are still landmark features.
Aboriginal (Indigenous) lands	Land set aside for use of Indigenous people, access to which is controlled by Federal or State authorities or by Aboriginal/ Indigenous Land Councils.
Accuracy	The degree of conformity with a standard, or the degree of perfection attained in a measurement. Accuracy relates to the quality of a result, and is distinguished from precision, which relates to the quality of the operation by which the result is obtained.
AGD66	Australian Geodetic Datum 1966. The datum used for the determination of *co*-ordinates for Geoscience Australia topographic map products and data of medium scale prior to the introduction of the GDA94 datum (see marginalia detail for further information on which datum was used for a particular map & projection information internal to data coverages for digital products).
AGDB	Australian Geographic Data Base program. A program initiated by AUSLIG to produce GIS quality digital spatial data from its map production material.
Aerodrome	An area for the movement of aircraft and for the receipt and discharge of cargo. Aerodromes may be licensed by Airservices Australia.
Airport	Technically an aerodrome at which facilities exist for the shelter, servicing and repair of aircraft, and at which major navigation aids are installed. Note: Airport is used generically in these specifications to include licensed Aerodromes.
Alignment	The direction or position of a linear feature (e.g., road or railway), on a map in relation to surrounding topographic detail.
Altitude	The vertical distance of a level, a point or an object considered as a point, measured from Mean Sea Level.
AMG	See Australian Map Grid.
AMG66	The grid (metres) coordinate set based on the AMG and the 1966 national geodetic adjustment.
Approximate	Very near, fairly correct, near to the actual. ‘Approximate Position’ is used as a descriptive note on a map to indicate detail, the position of which cannot be determined to the accuracy of the map accuracy statement.

Area feature	A feature, which is portrayed as a region or surface. An area feature is bounded by one or more polygons.
Area symbol	A continuous and distinctive shading, tone or repetitive pattern employed on a map (or chart) to cover an area (or areas) where a particular phenomenon occurs, or to which a particular value is attributed.
Attribute	A descriptive characteristic of a feature. An attribute has a defined set of attribute values.
Attribute object	The attribute object holds the non-locational information about the feature instance
AUSLIG	The Australian Surveying and Land Information Group, which subsequently amalgamated with Australian Geological Survey Organisation (AGSO) to form Geoscience Australia.
Australian Geodetic Datum (AGD)	The geodetic datum adopted by Australia in 1966, defined by the parameters of the Australian National Spheroid and the coordinates of the Johnston Geodetic Station.
Australian Height Datum (AHD)	The datum used for the determination of elevation in Australia. The determination used a national network of benchmarks and tide gauges and set Mean High Water as zero elevation.
Australian Map Grid (AMG)	A cartesian coordinate system based on the Universal Transverse Mercator projection and the Australian Geodetic Datum. The unit of measure is the metre. (see also AMG66)
Australian National Spheroid	A reference spheroid for the computation of surveys, with specific application to Australia and the territories administered by Australia, with exceptions, having the following dimensions: Semimajor axis 6 378 160.0 metres Flattening or ellipticity of 1/ 298.25. and whose minor axis is defined to be parallel to the earth's mean axis of rotation at the start of 1962, and whose plane of zero geodetic longitude is parallel to the vertical through the Bureau International del Heure (BIH) mean observatory near Greenwich; that is to say, 149°00' 18.855" west of the vertical through the photo zenith tube at Mount Stromlo. The position of the centre of the spheroid is defined by the coordinates of the Johnston Geodetic Station. (c.f., Australian Geodetic Datum).
Azimuth	The azimuth of a point is the angle reckoned clockwise in a horizontal plane between the local meridian and that point.
Base map	A map or chart showing certain fundamental information, used as a base upon which additional data of specialised nature are compiled or overprinted.
Base material/digital data	This is hardcopy material or digital data which Geoscience Australia has designated as the starting point on which producers build a new dataset and apply any appropriate revision source material. This includes entities such as

	repromat, latest previous edition map produced by GA, Maps produced by other mapping authorities, GEODATA 250K series 2, State mapping authority digital data.
Bearing	The horizontal angle at a given point measured clockwise from a specific reference datum to a second point.
Bleed (Printing)	Where the printed area extends beyond the trim line so that once trimmed the ink extends to the edge of the paper.
Bleed edge (cartography)	That edge of a map or chart on which detail is extended to the edge of the sheet. Maps, which have a bleed edge, overlap the adjoining maps and generally duplicate the detail thereon, along their northern and eastern edges.
Boundary description	A written description of the alignment of a boundary which enables its position to be correctly located on the ground and plotted to scale on graphics. The boundary is said to be described by metres and bounds.
Boundary disclaimer	A note usually in the marginal area of a map or chart proclaiming that boundaries portrayed on the face of the map or chart are not necessarily authoritative.
Braided Stream	A watercourse comprised of a number of interlaced channels resulting from irregular stream discharge and deposition of course material.
Central meridian	The longitude of origin at the centre of each zone of the Universal Transverse Mercator (UTM) grid. The central meridian is arbitrarily given the value 500 000 metres.
Chain	A line composed of a sequence of non-intersecting line segments bounded by nodes. Chains reference the polygons to the left and right of the chain, and may reference the start and end nodes.
Chart	A special purpose-map, generally designed for navigation or other particular purposes, in which essential map information is combined with other data critical to the intended use.
Clone	An exact copy of a point, line or polygon feature which has precisely the same co-ordinate position as the original feature. Cloned linear or polygon features will have exactly the same number of arcs and associated vertices and nodes.
Coincident	Where a feature location matches exactly the same co-ordinate position as another feature. The coincidence may be either at a single point or along a line feature. Where the endpoints of a linear feature leave the coincident section of line (ie. to change direction) and fall within 1 metre of that line, they are considered to be coincident for data purposes.
Colour Control	Blocks of colour of known density to assist the printer to maintain consistent colours across the sheet.

Colour Separations	Film separations -- one for each colour, which will be reproduced by a separate plate.
Compilation	The production of a new or revised map or chart, or portion thereof, from existing maps, aerial photographs, satellite imagery; surveys, and other source data.
Connector feature	An artificial linear feature used to connect a linear network across an area feature. This allows continuity of the feature and assists the process of linear network analysis.
Control	A collective term for a system of marks or objects on the earth or on a map or photograph, whose positions or elevations, or both, have been determined.
Convergence of meridians	The angular drawing together of the geographic meridians in passing from the equator to the poles. At the equator, all meridians are mutually parallel; passing from the equator, they converge until they meet at the poles, intersecting at angles that are equal to their differences in longitude.
Datum	A point, plane, or surface to which systems of measurement are referred or related to one another. Hence: 1. GEOCENTRIC DATUM A reference frame which has its origin as the Earth's centre of mass, which is directly related to the orbits of satellites. Positioning from these satellites is a critical element in modern surveying, mapping, geographic information systems, navigation, aviation, land and sea transport, emergency services, law enforcement and recreation. 2. GEODETIC DATUM the position of a reference spheroid as defined by the position of one selected station, usually near the centre of the survey area, known as the origin, and the azimuth from the origin to an adjoining station. 3. VERTICAL DATUM A level surface to which elevations are referred, usually, but not always, mean sea level.
Definite	Exact, precise, defined. Especially that detail which is unambiguous to the map user and may be accurately plotted
DEM	See Digital Elevation Model.
Descriptive name or term	Written information on a map or chart used to specify the nature of a physical or cultural feature. Also called toponym.
Digital Elevation Model	A depiction of relief using points and lines, which contain the elevation of each point or the elevation of each point in a line. The data may be in a regular grid or have an irregular spacing.
Dismantled	A feature, such as a railway, from which vital components have been removed and the remaining evidence of a railway is primarily the cleared right of way.
Disused	A feature components of which are still in place but which is no longer in use.

Easting	A linear distance eastwards from the vertical grid line, which passes through the Origin (or False Origin) of a Grid system.
Edition number	A higher number indicates that a map contains later information than a similar map bearing a lower number, and the highest edition number is therefore the current edition of a map.
Elevation	Vertical distance from a datum, usually Mean Sea Level to a point or object on the earth's surface.
Ellipsoid	A mathematically defined surface to which positions and measurements are referred.
Extension	The extension of detail outside the neatline of a map.
False origin	A datum point chosen to the south and west of the TRUE Origin of a grid to ensure that all points have positive grid co-ordinate values.
Feature	Cartographic feature. Spatial data feature. An abstraction of a real world phenomenon selected properties of which are illustrated on a map or held as spatial digital data.
Feature class	A group of features defined by a set of rules and which have common characteristics and relationships that are properties of the corresponding real world phenomena.
Feature instance	An occurrence of a feature class that has a unique set of attribute and relationship values.
Field check	The operation of checking a map compilation manuscript on the ground. Also called Field completion.
Gauge	A dimensional standard, especially the distance between the two inside edges of the rails of a railway line.
Gauge (railway)	Broad Gauge 1600 mm Narrow gauge 1067 mm Standard Gauge 1435 mm
Gazetteer	A list of geographic names, together with references to their positions and, sometimes, descriptive information.
GDA94	See Geocentric Datum of Australia (GDA94)
Generalisation	A process by which features which cannot be separated at a given map scale are displaced from their true positions or simplified for the sake of cartographic clarity.
Generic term	That part of a name which describes the kind of feature to which the name is applied, and which has the same meaning in current local usage; e.g., the generic term 'cape' in Cape York.
Geocentric Datum of Australia (GDA94)	Geocentric Datum of Australia 1994. A geocentric datum used for the determination of geographic co-ordinates. GDA94 is now in use for GEODATA TOPO 250K series 2

	and GEODATA TOPO 100K series 1 as well as associated topographic map products. See Appendix M (for technical description).
GEODATA	The commercial name adopted by by Geoscience Australia (formally AUSLIG), for its range of quality digital data products.
Geodesy	The science concerned with the determination of the size and figure of the earth (Geoid) by such direct measures as triangulation levelling and gravimetric observations; which determines the external gravitational field of the earth and to a limited degree the internal structure.
Geographical coordinates	A position given in terms of latitude and longitude.
Geographical sheet lines	The lines of latitude and longitude bordering the area of a map or chart and so form the edge of the map sheet.
Geoid	The equipotential surface in the gravity field of the earth, which coincides, with the imaginary extension of mean sea level continuously through the continents. The direction of gravity (the plumbline) is perpendicular to the geoid at every point. The geoid is the surface of reference for astronomical observations and for geodetic levelling.
Georef (Geographic Reference)	A world wide positional reference system that may be applied to any map or chart graduated in latitude and longitude regardless of projection.
Geoscience Australia	An Australian Government Agency responsible for geoscience research and geospatial information. It was created in November 2001 through the amalgamation of the Australian Survey and Land Information Group (AUSLIG) and the Australian Geological Survey Organisation (AGSO).
GIS	Geographic Information System. A spatial database, which is manipulated with a set of spatial operators or commands.
Graticule	A network of lines on a map or chart representing the parallels of latitude and meridians of longitude of the earth.
Great circle	A circle on the surface of the earth, the plane of which passes through the centre of the earth. The equator and all the meridians of longitude are Great Circles.
Greenwich meridian	The meridian through Greenwich, England, serving as the reference for Greenwich time, in contrast to local meridians. It is accepted almost universally as the prime meridian or the origin of measurement of longitude.
Grid	Two sets of parallel lines intersecting at right angles and forming squares; a rectangular Cartesian coordinate system that is superimposed on maps, charts, and other similar representations of earth's surface in an accurate and consistent manner to permit identification of ground locations with respect to other locations and the computation of direction and distance to other points.

Grid bearing	A bearing measured clockwise from Grid North.
Grid convergence	The angular difference in direction between Grid North and True North. It is measured east or west from True North.
Grid magnetic angle	Angular difference in direction between Grid North and Magnetic North. It is measured east or west from Grid North.
Grid north	The northerly or zero direction indicated by the Grid datum of directional reference.
Grid reference	The position of a point on a map expressed in terms of grid letters and/or coordinates. Conventionally the 'Easting' distance is given before the ‘Northing’.
Grid zone designation	An arbitrary division of the earth’s surface designed for identification without reference to latitude or longitude.
Height	The vertical distance from the base to the top.
Heliport	A constructed and maintained landing area for helicopters.
Highest astronomical tide	The highest tide level, which can be predicted to occur under average meteorological conditions and under any combination of astronomical conditions.
Horizontal control	A network of stations of known positions referred to a common horizontal datum (in Australia, AGD) and which control the horizontal position of mapped features.
Hydrographic chart	A chart for marine navigation showing water depths, nature of bottom, elevations of land features, configuration and characteristics of the coast, dangers to navigation, navigation aids.
Hydrography	Those features both natural and constructed of which water is the main constituent, either permanently or intermittently. Also, a GEODATA theme consisting of features pertaining to the drainage and run-off of water.
Indefinite	Vague, undefined; that detail which cannot be accurately defined.
Index to adjoining sheets	A diagram, on a map, which shows names and/or series numbers of Adjoining Sheets in the same or related series.
Infrastructure	A GEODATA theme consisting of features pertaining to transportation systems and also includes named localities and places.
Inset	A separate map positioned within the neat line of a larger map. Three forms are recognised: 1. An area geographically outside a sheet, but included therein for convenience of publication, usually at the same scale. 2. A portion of the map or chart at an enlarged scale. Sometimes called an 'inset plan'. 3. A smaller scale map or chart of surrounding areas,

	included for location purposes.
Isogonic	Of equal magnetic declination. Isogonals are lines of equal magnetic declination on a map.
Joint Operations Graphic (JOG)	A military map specification used for some 1:250 000 scale maps of Australia.
Landing ground	Unlicensed facility with clearly marked runway but no airport facilities.
Large scale map	A map having a representative fraction (scale) of 1:75 000 or larger. eg. 1:25 000, 1:12 500.
Latitude	The latitude of a place is its angular distance on a Meridian, measured northwards or southwards from the terrestrial Equator.
Layer	Subdivision of a theme into one or more layers of data on the basis of topological relationships. Linear networks, polygons and point/line features are placed in separate layers.
Linear network	A theme layer consisting of linear features, which are connected forming a pathway, along which movement is possible.
Longitude	A linear or angular distance measured east or west from a reference meridian (usually Greenwich) on a sphere or spheroid.
Lowest astronomical tide	The lowest level, which can be predicted to occur under average meteorological conditions and under any combination of astronomical conditions. For reasons of safety lowest Astronomical Tide is the datum used by Navy's Hydrographic Surveys.
Magnetic declination	The angle between true north and magnetic north. The magnetic declination varies for different places continuously with respect to time.
Magnetic north	The uncorrected direction indicated by the north-seeking pole of a compass magnetic needle.
Magnetic variation	Regular or irregular change with time of the magnetic declination.
Map	A representation of part or whole of the earth's surface usually to scale showing both natural and artificial features.
Map accuracy specifications	Specifications, which set up standards to which the completed map, must adhere.
Map Grid of Australia 1994	A coordinate system based on the Universal Transverse Mercator projection and the Geocentric Datum of Australia 1994. The unit of measure is the metre.
Map projection	Any systematic way of representing the meridians and parallels of the earth upon a plane surface.

Map series	A group of map sheets usually having the same scale and cartographic specifications and collectively identified by the producing agency.
Map sheet	An individual map, either complete in itself or part of a series.
Margin	The area of a map sheet, which lies outside the Neatline.
Marginal information (Marginalia)	Information, both standard and of a variable nature, in the form of explanatory notes, symbols and diagrams printed in the margins or borders of maps, charts and other graphics.
Mean High Water (MHW)	The average height of all high waters at a place over an 18.6 year period. On small and medium scale maps MHW coincides with the coastline.
Mean sea level	The mean level of the sea throughout a definite number of complete tidal cycles.
Medium scale map	A map having a scale larger than 1:600 000 and smaller than 1:75 000. eg. 1:100 000.
Mercator projection	The conformal cylindrical projection tangential to the equator possessing the additional valuable property that all rhumb lines are represented by straight lines. Used extensively for hydrographic and aeronautical charts.
Meridian	A Great Circle arc of 180° terminated by the geographic poles.
MGA94	See Map Grid of Australia
MHW	See Mean High Water (MHW).
Minor road	Access, residential or local road.
National park	An area subject to strict control of the activities, which may take place in it, and under Government supervision to maintain its value to the public.
National Topographic Map Series (NTMS)	A civilian map series comprising a set of consistent topographic maps nationwide, at scales of 1:100 000 and 1:250 000.
NATMAP	A product name for topographic 1:100 000 and 1:250 000 scale map products using the NATMAP product name. The use of a NATMAP logo was dropped in October 2003 and replaced with the Australian Coat of Arms.
Nautical mile	A measure of distance equal to one minute of arc of a great circle on the earth's surface. The International Nautical Mile is equal to 1852 metres.
Neatline	A line, usually on the grid or graticule, which encloses the detail of a map.
Node	A point that is a junction of two or more chains or which is

	the end point of a chain.
Node/chain structure	The structuring of linear features in a theme layer so that they consist of chains broken by nodes at intersections or at the point where an attribute of the feature changes.
Non-perennial	Contains water for several months of each year or only contains water intermittently.
Northing	A linear distance northwards from the horizontal grid line which passes through the True Origin or False Origin of a grid.
Overshoot	The case where the spatial object extends beyond its actual position in relationship to other features. For example, at a 'T' road junction where the upright forms a 'ŧ'. See also Undershoot.
Parallel	A Small Circle parallel to the equator, on which all points have the same Latitude.
Perennial	Where an area normally contains water for the whole year, except during unusually dry periods, in at least nine years out of ten.
Planimetric map	A map representing only the horizontal positions of detail.
Polygon	A set of chains used to define the boundaries of an area. There is one external polygon and there may be one or more internal, non-nested polygons.
Positional accuracy	Statistical estimate of the degree to which planimetric co-ordinates and elevations of features agree with their real world values.
Principal road	Highway, regional and through road.
Prohibited area	An area into which entry is prohibited without the prior permission of the controlling authority.
Proof	An advanced copy of a map produced either from final film (chemical proof) or from a printing press (press proof) to check the design, register and/or to enable errors to be detected and corrected before final printing.
Reliability notes	A notation in the margin of a map, which shows the dates and quality of the source material from which the map has been compiled.
Relief (GEODATA)	A GEODATA theme consisting of features defining the elevation and shape of the terrain.
Relief	The deviation of an area of the earth's surface from a plane. It refers to the physical shape of the surface of the earth.
Representative fraction (RF)	The scale of a map or chart expressed as a fraction or ratio, which relates unit distance on the map to distance measured in the same unit on the ground. Sometimes called 'natural scale'.

Reproduction material	Material, generally in the form of positive or negative copies on film of each colour plate, from which a map may be reprinted without redrafting. Commonly called 'Repromat' or 'Rep mat'.
Repromat	See Reproduction material
Scale	The relationship between the distance on a photograph, map or other graphic to its corresponding distance on the ground or to another graphic. See also Representative Fraction.
Scale bar	A graduated line by means of which distances on the map or chart may be measured in terms of ground distances.
SDTS	The United States Spatial Data Transfer Standard. This standard is to be the basis of the new Australian Standard for the transfer of spatial digital data.
Secondary road	Linking and distributor road.
Segment	A direct line between a pair of vertices or a vertice and a node.
Series designation	The letters and numbers used to identify land maps and provide a unique designation for each map series by which it can be differentiated from all other series.
Sheet line system	The system by which a Map Series is divided into individual Map Sheets.
Sheet numbering system	The system by which individual map sheets within a series are numbered.
Sliver	Long, thin triangle or polygon of very small area formed by overlaying of almost coincident lines. Often a result of twice digitising the same linear feature.
Small scale map	A map having a scale smaller than 1:600 000. eg. 1:1 000 000.
Source material	Data of any type required for the production of maps and charts including, but not limited to ground control, aerial and terrestrial photographs, satellite imagery, sketches, maps and charts; meteorological information; intelligence documents and written reports pertaining to natural and constructed features of the area to be mapped or charted.
Spatial object	The spatial object holds the locational information of a feature instance. For GEODATA it is composed of either a point, node, line or polygon.
Specification	A document, which sets out the standards to be adhered to in, the production of a particular dataset, map or map series. This generally contains information, which describes or represents data structure, the sheet layout, marginal information, symbols, lettering and colours to be adopted.

Standard parallel	The parallel or parallels on a conical projection along which the principal scale is preserved.
State forest	A tract of forest land gazetted as such by a government.
SYMBAS	SYMBOLISATION ALL SERIES, specifications for topographic maps published by Royal Australian Survey Corps in 1988.
Symbol	A letter, character or other graphic device representing some feature, quality or characteristic on a map.
Terrain	A tract of country considered with regard to its natural features and configuration.
Thematic map	A map designed to demonstrate particular features or concepts. In conventional use, this term excludes topographic maps. Thematic maps include rainfall maps, population distribution maps, and the like.
Theme	The information contained in the map production material is divided into four themes, which contain logically related geographic information (Hydrography, Infrastructure Relief and Vegetation). Each theme is capable of being used as a data set in its own right.
Tile	The area of a spatial database included in a data transfer.
Tile edge	An artificial linear feature, which indicates the boundaries of the tile. The tile edge closes off polygon features, which are situated in more than one tile.
Topographic map	A map whose principal purpose is to portray and identify the features of the Earth's surface as faithfully as possible within the limitations imposed by scale.
Topography	The detailed description, especially on a map, of a locality; including its relief and any relatively permanent objects, whether natural or of human origin, thereon. The configuration of a surface, including its relief, the position of its streams, lakes, roads, cities, and other features. The earth's natural and physical features collectively.
Track (railway)	The number of sets of rails.
Track (vehicular)	Public or private roadway of minimum or no construction, not necessarily maintained.
Transverse Mercator projection (TM)	A conformal cylindrical map projection, originally devised by Gauss, also known as the Gauss-Kruaer projection. As its name implies its construction is on the same principle as the Mercator projection, the only difference being that the great circle of tangency is now any nominated meridian. Meridians and parallels are curved lines, except for the central meridian or a specified zone (meridian of tangency), which remains a straight line. Projection zones are established about the central meridian and vary in width from two degrees to six degrees of longitude, with some overlap between zones.

	Properties: Scale: Scale is true along the central meridian, but enlarges away from the central meridian. Conformality: The projection is conformal; meridians and parallels intersect at right angles and all angles are correctly represented. Sheet fit: Map sheets at the same scale and within the same zone with the same central meridian fit perfectly along their sheet edges. General: The amount of scale distortion may become unacceptable at distances greater than about 1.5 degrees in longitude from the central meridian. In a modified form the projection is in general use for topographic mapping at scales of 1:250 000 and larger. See **UNIVERSAL TRANSVERSE MERCATOR**.
True bearing	The horizontal angle between the meridian line and a line through the observed point, measured clockwise.
True north	The direction from an observer's position to the geographic North Pole.
UFI	Unique Feature Identifier.
Undershoot	The case where the spatial object stops before its actual position in relationship to other features. For example, at a 'T' road junction where the upright fails to meet the cross bar. See also Overshoot.
Universal Transverse Mercator (UTM)	A world wide systematic application of the Transverse Mercator Projection applying to the region between 80°S and 84°N latitude. The UTM is a modified TM projection whereby the natural scale of the central meridian is scaled by a factor of 0.9996 to enable a wider area to be mapped with acceptable distortion. Each Zone is six degrees of longitude in width with a half degree of overlap within the adjoining zone and having a true origin at the intersection of the central meridian of that zone and the equator.
Vegetation	A GEODATA theme consisting of features describing the vegetation cover.
Vertical control	The measurements taken by surveying methods for the determination of elevation with respect to a vertical datum.
Vertice	An intermediate point on a chain for which coordinates are held in the data.
WGS 84	World Geodetic System 1984. A geocentric datum used for the determination of geographic co-ordinates. It is for most practical purposes the same as GDA 94.
Work Package	A group of Work Units bundled together for production by a producer.
Work Unit	One map sheet and its related dataset within a work package.

World Aeronautical Chart (WAC)	A series of aeronautical charts at the scale of 1:1 000 000 that has been planned to cover the whole surface of the earth (including both land and sea areas) to a common specification laid down by the International Civil Aviation organisation.
World geodetic reference system 1972 (WGS 72)	Superseded by WGS 84. A reference spheroid having the following dimensions: semimajor axis 6 378 135.0 metres; and a flattening or ellipticity of 1/ 298.26.
Zone	See UTM.

Appendix M - The Geocentric Datum of Australia

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1. Introduction

A geocentric datum is a reference surface, which has as its origin the Earth's centre of mass. The new Geocentric Datum of Australia (GDA) is based on the Australian Fiducial Network (AFN), which fits into a global geodetic framework.

The AFN comprises eight highly accurate survey marks across Australia each with a permanently tracking Global Positioning System (GPS) receiver. It has been established by AUSLIG (which subsequently amalgamated with AGSO to form Geoscience Australia) for geodetic surveying and scientific purposes. The AFN was used as the foundation to determine geocentric coordinates for the Australian National Network (ANN). The ANN comprises 70 survey points across Australia at approximate 500 km spacings each having latitude and longitude on the GDA. GPS data has been obtained at each of the 70 survey points allowing ANN points to be linked into the framework provided by the AFN.

The AFN and ANN are the basis of a unique national geocentric coordinate system, which, with regional networks, provide the fundamental framework for all geographic information over Australia.

1.1 Changes which will occur

Conversion to the GDA will be most noticeable on mapping products. With the geocentric datum, the map projection and mapping grid zones will remain the same.

The borders of maps will have the same latitude and longitude but will be in slightly different positions on the ground. This means detail on existing maps cannot be joined with corresponding detail on maps under the new system. The impact of this 'displacement' will be greater on large-scale maps compared with small-scale maps.

There will be a shift, or displacement, of approximately 200 meters across Australia in a north-east direction between coordinates of points on the existing Australian Geodetic Datum compared with coordinates of the same points on the Geocentric Datum.

During the transition to a fully operational geocentric datum, map makers may choose to print overlaps on the northern and eastern edges of maps produced on a geocentric datum to enable them to be joined to maps on existing datums.

1.2 The benefits

The adoption of a geocentric datum will allow for a single standard for the collection, storage and use of geographic data. A geocentric datum is the best fitting reference surface for the whole earth and provides direct compatibility with GPS.

By adopting a single geocentric datum, Australia is well placed to take advantage of the widespread benefits of satellite based positioning systems.

2. Technical Specifications - GDA94

2.1 Terminology

Datum	Geocentric Datum of Australia (GDA)
Geographical coordinate set (latitude and longitude)	Geocentric Datum of Australia 1994 (GDA94)
Grid coordinates (Universal Transverse Mercator)	Map Grid of Australia 1994 (MGA94)

2.2 Definition

Reference Frame	ITRF92 (International Terrestrial Reference Frame 1992)
Epoch	1994.0
Ellipsoid	GRS80
Semi-major axis (a)	6,378,137.0 meters
Inverse flattening (1/f)	298.257222101

2.3 National transformation parameters - AGD84 TO GDA94

(Bursa-Wolf model)

Parameter	**Value**
DX (m)	-117.763
DY (m)	-51.510
DZ (m)	139.061
R_X (secs)	-0.292
R_Y (secs)	-0.443
R_Z (secs)	-0.277
Sc (ppm)	-0.191

Note

There are two different ways of applying the sign conventions for the rotations. In both cases the sign convention is the same (a positive rotation is an anti-clockwise rotation, when viewed along the positive axis towards the origin). However, some software packages assume the rotations to be of the position around the coordinate axes, while the method historically used in Australia (as with the parameters above) assumes the rotations to be of the coordinate axes. The only difference in the formula is a change in the signs of the angles in the rotation matrix. If the sign of the rotation parameters and the formulae used are consistent the correct results will be obtained. The only way to be absolutely sure which method or parameters are required is to test them using a known input and output for a set of parameters, as shown in 'The Geocentric Datum of Australia Technical Manual' at: www.icsm.gov.au/icsm/gda/gdatm/index.html (Select options GDA, Technical Manual & then GDA Technical Manual).

3. Sample User Defined Coordinate system

The datum will be user defined in ARC/INFO export files. Sample definitions for typical 1:250 000 and 1:100 000 Scale WORKING DATABASE and GEODATA ArcInfo Projection (.prj) files are given below:

WORKING DATABASE – Sample Coordinate System Description (as defined in a Projection File):

```
Projection    TRANSVERSE
Datum         USER_DEFINED 0.000 0.000 0.000 0.0000 0.0000 0.0000 0.0000
Zunits        NO
Units         METERS
Spheroid      GRS1980
Xshift        0.0000000000
Yshift        0.0000000000
Parameters
0.99960000 /* scale factor at central meridian
 147  0  0.000 /* longitude of central meridian
 0  0  0.000 /* latitude of origin
500000.00000 /* false easting (meters)
10000000.00000 /* false northing (meters)
```

Note: The same information may be expressed differently, for example by giving the Major and Minor axes for GSR 1980.

GEODATA – Sample Coordinate System Description (as defined in a Projection File):

```
Projection    GEOGRAPHIC
Datum         USER_DEFINED 0.000 0.000 0.000 0.0000 0.0000 0.0000 0.0000
Zunits        NO
Units         DD
Spheroid      GRS1980
Xshift        0.0000000000
Yshift        0.0000000000
Parameters
```


APPENDIX N

HISTORY OF THE NATIONAL TOPOGRAPHIC MAP SERIES (NTMS), NATMAP SERIES AND GEODATA VECTOR PRODUCT

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Background

The National Mapping Division (NMD) within Geoscience Australia was formerly known as the Australian Surveying and Land Information Group (AUSLIG). The change to Geoscience Australia occurred in September 2001. Prior to AUSLIG, the organisation was known as the Division of National Mapping, producing maps badged as NATMAPs. The organisation has been, since its inception, the Australian Government's civilian surveying, mapping and land information agency. One of NMD's major responsibilities is the provision and maintenance of topographic mapping information at national scales.

The majority of the 1:100 000 and 1:250 000 topographic mapping program was shared by the civilian organisation and Australia's defence mapping organisation named variously as the Royal Australian Survey Corps (RASvy), Directorate of Strategic Military Geographic Information (DSMGI) and the Defence Topographic Agency (DTA), now renamed as the Defence Imagery and Geospatial Organisation (DIGO). A small number of map sheets were also produced by State mapping agencies.

1:100 000 scale NTMS Maps (AGD66 Datum)

The production of the 1:100 000 NTMS was coordinated by the Division of National Mapping and its successor the Australian Surveying and Land Information Group, who carried out the compilation of the map material in conjunction with private sector producers. This map series has a standard sheet size of 0.5 degrees of latitude by 0.5 degrees of longitude. Maps were compiled for the whole of Australia, and published maps were limited to the more populated and developed coastal fringe of the continent. Compilations inside 'the red line' (a boundary line delineating the extents of Australia's remote areas) were not fair drawn or published, however they provided a primary reference source for use in the production of the 1:250 000 map series.

Overall positional control for the 1:100 000 map series was based on the Australian Geodetic Network using the 1966 adjustment and the Australian National Spheroid (Readers are referred to 'The Australian Geodetic Datum: Technical Manual', National Mapping Council of Australia, Special Publication 10, for more information on this geodetic datum.)

The base data for the map compilation material was obtained through the stereographic observation of aerial photography. The aerial photography was generally flown at a nominal scale of 1:80 000 in blocks that equated to 1:250 000 map sheets. Some photography was at a larger scale, and a variety of specialised aerial photography cameras were used internally, namely the Wild RC-8, RC-9, RC-10 and Zeiss RMK brand/models. External contractors used other cameras. All these cameras were calibrated on a regular basis on goniometer calibration equipment.

Propagation of positional control through the blocks of photography was carried out by slotted template adjustment until the mid 1970's when a method using analytical block adjustments was introduced. In some areas radar altimetry was used to extend vertical control. As with the cameras, a number of stereo plotters were used for the plotting of detail and production of contours on the compilation material. Wild B8 and Kern PG2 plotters were used by this organisation, with others plotters being used by external contractors. Stereographic models from all plotters were sampled to ensure they complied with the appropriate accuracy specifications.

Finally, all map compilation material was checked against a variety of source information. Extensive field checking was carried out on the ground and from the air, with local authorities also being consulted. Larger scale reference material and supplementary photography was also used as source information.

Contact negatives were then produced from the final map compilations. Each negative was printed down on scribing material as a guide for the cartographer to manually scribe the detail according to prescribed map specifications. Subsequent production steps were similar to those described in more detail in the following section entitled '1:250 000 scale NTMS Maps (AGD66 Datum).

The national coverage for the 1:100 000 NTMS was completed in 1988.

1:250 000 scale NTMS Maps (AGD66 Datum)

NTMS maps sheets at 1:250 000 scale were published by the Division of National Mapping and a number were published under the AUSLIG logo. RASvy published the Joint Operation Graphics (JOG). The NTMS and JOG series replaced their predecessor, the R502 Series, which consisted largely of uncontoured maps at the same scale. The maps were produced on the Australian Map Grid (AMG), based on the AGD66 datum.

A total of 544 sheets comprising the NTMS/JOG series provided the first nationwide coverage of published, fully contoured, topographic maps.

Because many of the NTMS sheets were converted by RASvy to their specifications and re-published as JOG maps, there are many sheets available today with identical reliability dates but published by both agencies. Most of the first edition 1:250 000 scale NTMS and JOG maps were derived manually from 1:100 000 scale topographic maps and compilations. Some were derived from 1:100 000 and 1:50 000 digital data.

The following procedures were used to develop the 1:250 000 map production material (repromat). Where 1:100 000 maps were published the relevant map repromat was used. In the remote areas where 1:100 000 maps were not published, the relevant 1:100 000 compilation material was used.

To ensure accurate registration of all the required drafting materials (clear film, scribe sheets, masks, photographic film etc.), the materials were pre-punched on the same large format, register punch. Reference grids and graticules were computer-generated and plotted on a separate layer of stable base drafting film.
Map corner-marks were placed on all separate layers, e.g. hydrography, roads, contours etc. which were then reduced photographically to 1:250 000 scale on a large format Klimsch 'Super Autohorika 101' camera using the same camera setting for all material of the one map area.

A pre-punched clear film was registered to the graticule and all six reduced film positives of each layer registered to the relevant section of the 1:250 000 scale graticule, trimmed, butt joined and fixed to the clear film. A contact negative was produced from each of these assemblies. Each negative was printed down on scribing material as a guide for the cartographer to manually scribe the detail according to prescribed map specifications. Map detail was displaced if necessary to avoid overprinting and to ensure a cartographically acceptable product. Masks were cut on 'peelcote' type material to provide infill for area features such as lakes, built-up areas etc.

A colour proof of the line-work was used as a guide to type positioning on a clear film overlay. Type was added to the proof on completion of the overlay. The proof was thoroughly checked for accuracy, completeness and correct registration of detail. After proof corrections were carried out the final reproduction material used for platemaking by the printer was produced. Checking forms were used for quality control throughout the production process.

The national coverage for the 1:250 000 NTMS was completed in 1988.

GEODATA TOPO-250K Series 1 (AGD66 Datum)

This 1:250 000 scale topographic vector product was initiated and produced by the Australian Surveying and Land Information Group (AUSLIG), the predecessor of the National Mapping Division of Geoscience Australia. This was an initiative to capture for the first time a nationwide topographic digital data set at 1:250 000 scale, based principally on the conversion of existing published 1:250 000 maps to digital ArcInfo format.

GEODATA TOPO-250K contained a medium scale vector representation of the topographic features of Australia, and comprised 540 tiles, with three themes per tile. These themes were: Hydrography (drainage networks including watercourses, lakes, wetlands and offshore features); Infrastructure (systems for the transportation of goods and services, i.e. roads, railways and associated structures, along with localities, built-up areas and aeronautical features so that these services may be located; and Relief (a series of spot elevations, chosen so as to give a representative picture of the terrain).

This product was primarily sourced from the 1:250 000 National Topographic Map Series (NTMS) and the Royal Australian Survey Corps' Joint Operations Graphics (JOG) map reproduction material. This repromat was scanned and formed the basis for the digital data, with some additional data being captured via manual digitising processes. Digital information was also provided for Tasmania, and two map areas in Western Australia, by their respective state authorities. Where NTMS and JOG maps were published with identical reliability dates, the NTMS material was used. Selective 'corridor' revision from satellite imagery and other source material was conducted on a number of tiles during the life of this program.

As the TOPO-250K data were digitised from existing map production material, some features were subject to cartographic displacement. This vector data was tested and validated by AUSLIG using a mixture of UNIX scripts and ArcInfo commands which were independent of the production system. Graphical tests were used to check such things as structure, polygon closure, minimum size of polygons and topological relationships.

The national coverage was completed in 1994.

GEODATA–250K Series 2 & 1:250 000 scale NATMAPs (GDA94 Datum)

Following the completion of the GEODATA TOPO–250K Series 1 Vector product program in 1994, it was apparent that the existing paper map products needed to be updated. However, there was also a demand for incorporating all map features into the vector data product. At the same time it was recognised that efficiencies could be gained from producing the paper map and digital data product using parallel production methods. AUSLIG (now known as the National Mapping Division of Geoscience Australia) specified the production of a central database comprising the information to be included in both products as well as features that are specific to either the data (eg. hypsometric areas) or the map (eg. grid and graticule). From this database, the map features and layout could be extracted to produce a postscript file for repromat production, and the data features extracted to form the GEODATA TOPO–250K Series 2 tile. This central database was (and is still) referred to as the 'Working Database' and is held in ArcInfo format. It contained five themes per tile, comprised of up to 32 ArcInfo coverages or 'layers' per tile. This database formed the key data source for ongoing future revisions of both map and data products at 1:250 000 scale.

Revision of the content of the maps and digital data was based on source information gathered by the NMD and its predecessor the AUSLIG, but was carried out by private sector producers. Geo-referenced satellite imagery was a key source for plotting the position of features. Visual interpretation of the imagery was aided and supplemented by information from a wide variety of sources. Field verification trips were conducted by AUSLIG during the life of the program, and this also involved contacting a range of local government authorities, private companies and individuals as deemed appropriate in an effort to collect new up-to-date information for incorporation into the product. Other external agencies that could provide appropriate additional field-verification information were also involved in this process.

The maps were produced on the Map Grid of Australia (MGA), based on the GDA94 datum. The majority of producers involved in the production of maps and data under the Series 2 revision cycle used ArcInfo as their base production tool. ArcInfo format was the specified delivery format for the Working Database and TOPO–250K Series 2 tile. Another key feature of this program was the introduction of non-standard sheet lines for some map and data areas. Strong customer feedback was received about the availability of maps where the majority of the map was covered with sea and only a very small area of land was shown. Customers were also clearly frustrated by the break up of major cities or features across two map areas. Because of this, AUSLIG reviewed all traditional sheet lines and where practical, these were altered to provide optimum representation of the landmass and key map features. As a result, many map sheets were extended beyond the bounds of the traditional map areas and some map areas were rotated to cover an area of 1.5° latitude and 1° longitude. As a result of amending these sheet extents, the total number of 1:250 000 scale NATMAPs based on the GDA94 datum was reduced to 513 sheets.

The first map sheet in the new 1:250 000 NATMAP style was printed in March 1998, and national coverage of the revised maps generated from the GEODATA-250K Series 2 program was completed in 2003.

Revision & conversion of 1:100 000 scale NTMS maps (AGD66) to NATMAP format (GDA94)

The first revised 1:100 000 scale map printed in the new NATMAP style was printed in May 2000. This map, together with subsequent editions of the 1:100 000 maps, were produced on the new Map Grid of Australia (MGA), based on the GDA94 datum. Only a relatively small number of 1:00 000 map sheets in this series were selected for revision and subsequent publication (on a priority basis) from the national coverage.

As with the 1:250 000 scale NATMAPS, revision of the content of these maps was based on source information gathered by AUSLIG but carried out by private sector producers. Geo-referenced satellite imagery was a key source for plotting the position of features. Where recent aerial photography was available, it was also used to identify features seen on satellite imagery. Visual interpretation of the imagery was aided and supplemented by contact with local government and state mapping agencies as well as other groups such as mining companies, forestry groups, private land holders, emergency services and so on. These groups were a very important source of up-to-date and reliable information. Information obtained from various field trips was also incorporated where available, in conjunction with these other sources.

The producers involved in the production of the maps used ArcInfo, Microstation, Intergraph or CorelDraw as their production tool. The digital data produced in these various formats was archived internally within the organisation. However, at the time of archiving it was not planned to convert and upgrade this vector data into a format that would meet the quality standards expected of a GEODATA TOPO-100K data set that could be supplied to customers.

Revision of GEODATA–250K Series 2 and 1:250 000 NATMAPS (GDA94 Datum)

A revision program to update the GEODATA TOPO–250K Series 2 Vector product (Geoscience Australia's fundamental topographic data set), and generate associated revised 1:250 000 maps, began in 2003. Several new criteria were established when determining the elements for this revision process, to enable the product to be enhanced with respect to content and accuracy. Some of these elements included;

- A "targeted" approach in the selection of map & data work units to be revised, based on a priority and needs approach, with areas containing major urban areas receiving early attention. Areas considered subject to major change, or requiring an enhancement of detail, were given priority.
- A recognition that the previous NATMAP product needed to be reviewed with respect to the level, and type of, detail shown on the map (or where omissions had taken place during that series). Map areas were assessed according to the density of population, and the adequacy of the level of feature capture reviewed eg. additional Homesteads and water point features were required to be added in the less densely populated areas.
- Enhancing and revitalising a program of field verification work, strengthening communications with local government, state and private enterprise authorities and individual contributors, in an effort to obtain up-to-date, reliable source information.
- Upgrading the early GEODATA TOPO–250K Series 2 data & maps to an equivalent level of Specification used for the latter work units in the program, and incorporating any subsequent specification amendments occurring during the life of that program.

This GEODATA–250K Series 2 revision program is still in progress.

TOPO-250K Seamless Database project (GDA94 Datum)

Running in parallel with the revision of GEODATA TOPO–250K Series 2 and 1:250 000 NATMAPS has been a project to merge all 513 1:250 000 Working Database tiles into one continuous and complete dataset of Australia in an ArcGIS GeoDatabase format. This GeoDatabase will be the foundation for future revision of the 1:250 000 map product and its source digital data. Additionally, it will allow the provision of on-line nationwide topographic data coverage over the World Wide Web, and in the future the possibility of on-demand printing of unique maps for custom specified dimensions and use.

Future GEODATA-100K and associated 1:100 000 map program (GDA94 Datum)

A program for the initiation of the first version of the GEODATA TOPO-100K Vector product, together with the production of associated map products, is planned for mid-2004.

Appendix O – Indigenous Lands Guide

Background, Description & Supply of the Digital Indigenous Lands Guide

Background:

This guide is to be used to name selected Indigenous Lands and as a guide on the locations which require a restricted access text note on the map face.

Small holdings have been excluded from the guide for clarity reasons.

Rules for Placement of Text_notes:

- Where a Holding or Island is identified on the guide, and it occupies more than 10% of the land area of the map a text_note(s) is/are to be placed based on the geographical extent of the Holding or Island. On some maps it may be necessary to have multiple text_notes.

- For the Mainland the text_note should read:

  PERMITS MAY BE REQUIRED FOR ENTRY
  INTO OR TRAVELLING THROUGH
  INDIGENOUS LANDS AND COMMUNITIES

- For the Islands of the Northern Territory the text_note should read:

  ENTRY TO ISLANDS IS RESTRICTED, PERMISSION MUST
  BE SOUGHT FROM THE APPROPRIATE LAND COUNCIL

- For the Islands of Cape York the text_note should read:

  ENTRY TO ISLANDS IS RESTRICTED, PERMISSION MUST
  BE SOUGHT FROM THE APPROPRIATE ISLAND COUNCIL
  OR THE TORRES STRAIT REGIONAL AUTHORITY

- For Font type and size for text_noting of indigenous lands please see section 2.

Rules for Naming Indigenous Lands

- Only the holdings specifically named on this Guide and occupying greater than 20% of the map area will be named on the map.

- All names are to include the descriptor “INDIGENOUS LAND” e.g. the name “ANANGU PITJANTJATJARA” on the guide will read in the data and on the map as “ANANGU PITJANTJATJARA INDIGENOUS LAND”

- No boundaries are to be shown on the map unless there are represented by standard selection for coverage 3 Reserved Areas.

- For Font type and size for naming of indigenous lands please see section 2.

Coverage description:

Appendix0:

Polygon Attribute Item Definition:

LANDTYPE [54, 54, C]: Definition of Area Land Type corresponding to that shown on prepared pdf guide.

LANDSTOBENAMED [200, 200, C]: Indigenous Lands defined by GA as requiring Naming

Appendix01:

Polygon Attribute Item Definition:

CATEGORY [54, 54, C]: Definition of Indigenous Inland Areas

Appendix02:

Polygon Attribute Item Definition:

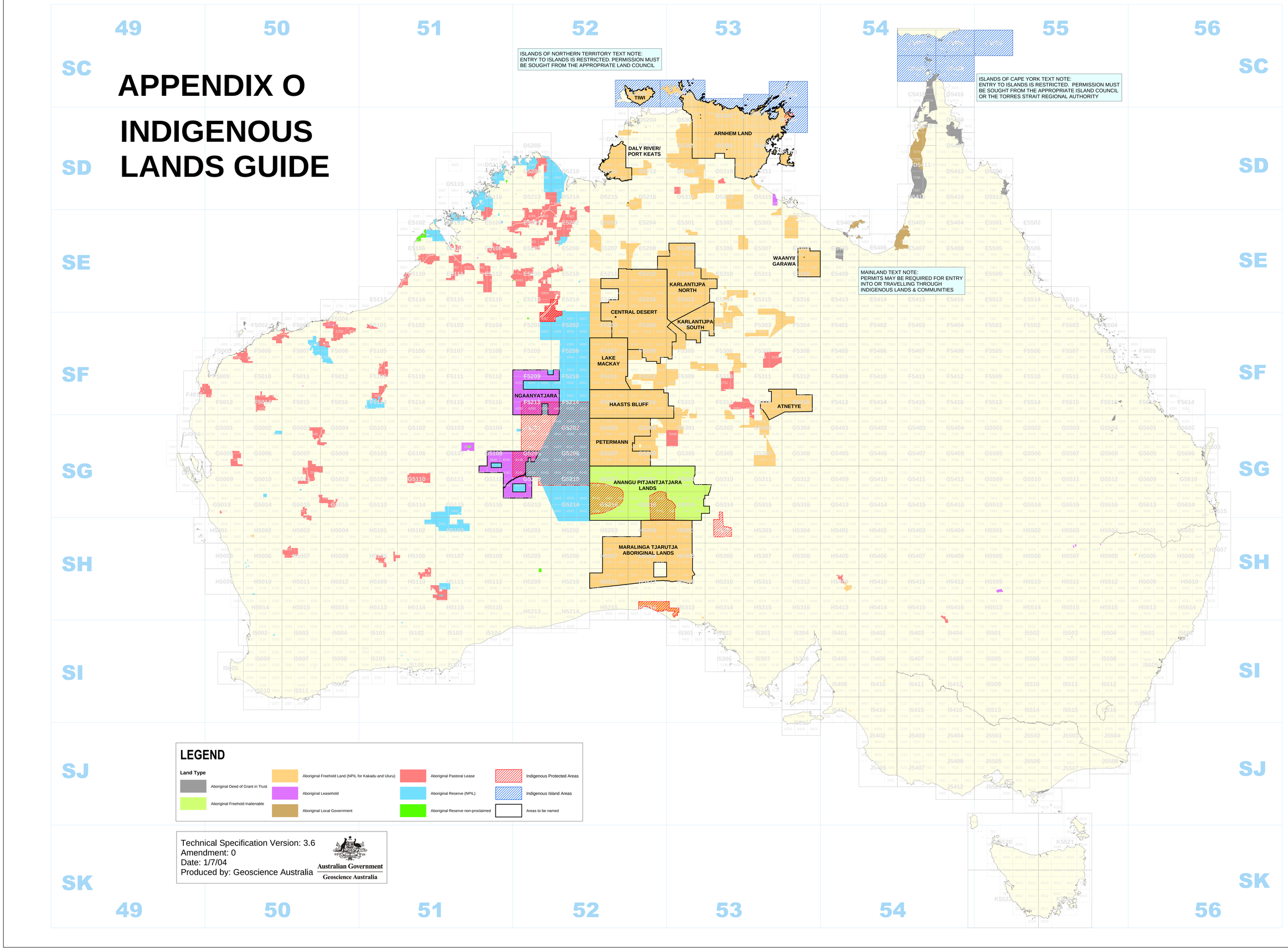
CATEGORY [54, 54, C]: Definition of Indigenous Protected Area

Supply:

The Appendix O guide is supplied in both a PDF and an ARC INFO uncompressed export file (Geographics GDA94) format, with the release of each specification version. Updates may be supplied with an amendment, if appropriate.

APPENDIX O

INDIGENOUS LANDS GUIDE



Appendix P

MAP GRID OF AUSTRALIA
100 000 METRE SQUARE IDENTIFICATION DIAGRAM

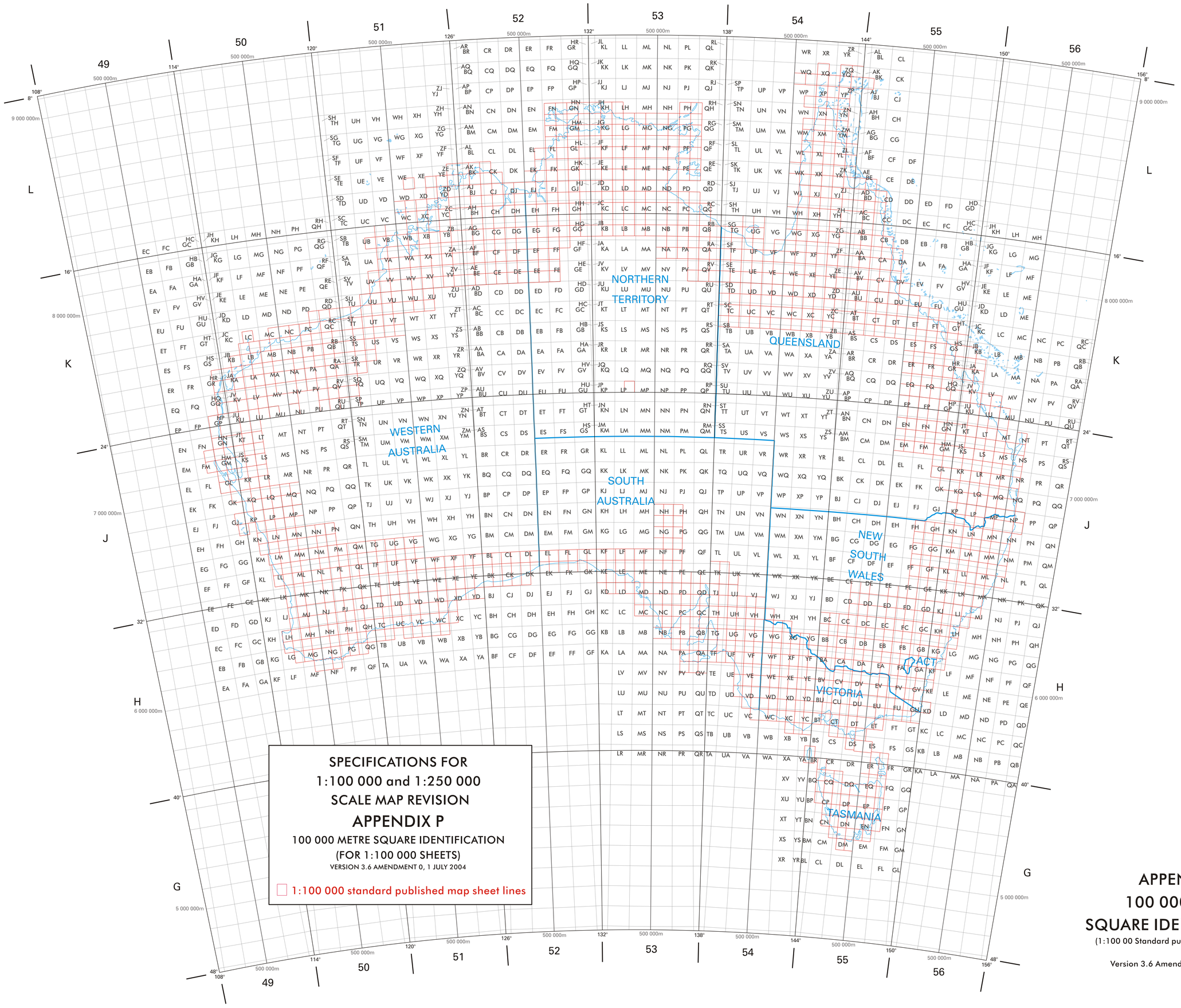
Two Guides are supplied in PDF format.
Each guide shows the Standard sheet lines relevant for each map scale ie.

Showing 1:250 000 Standard map sheet lines

and

Showing 1:100 000 Standard published map sheet lines

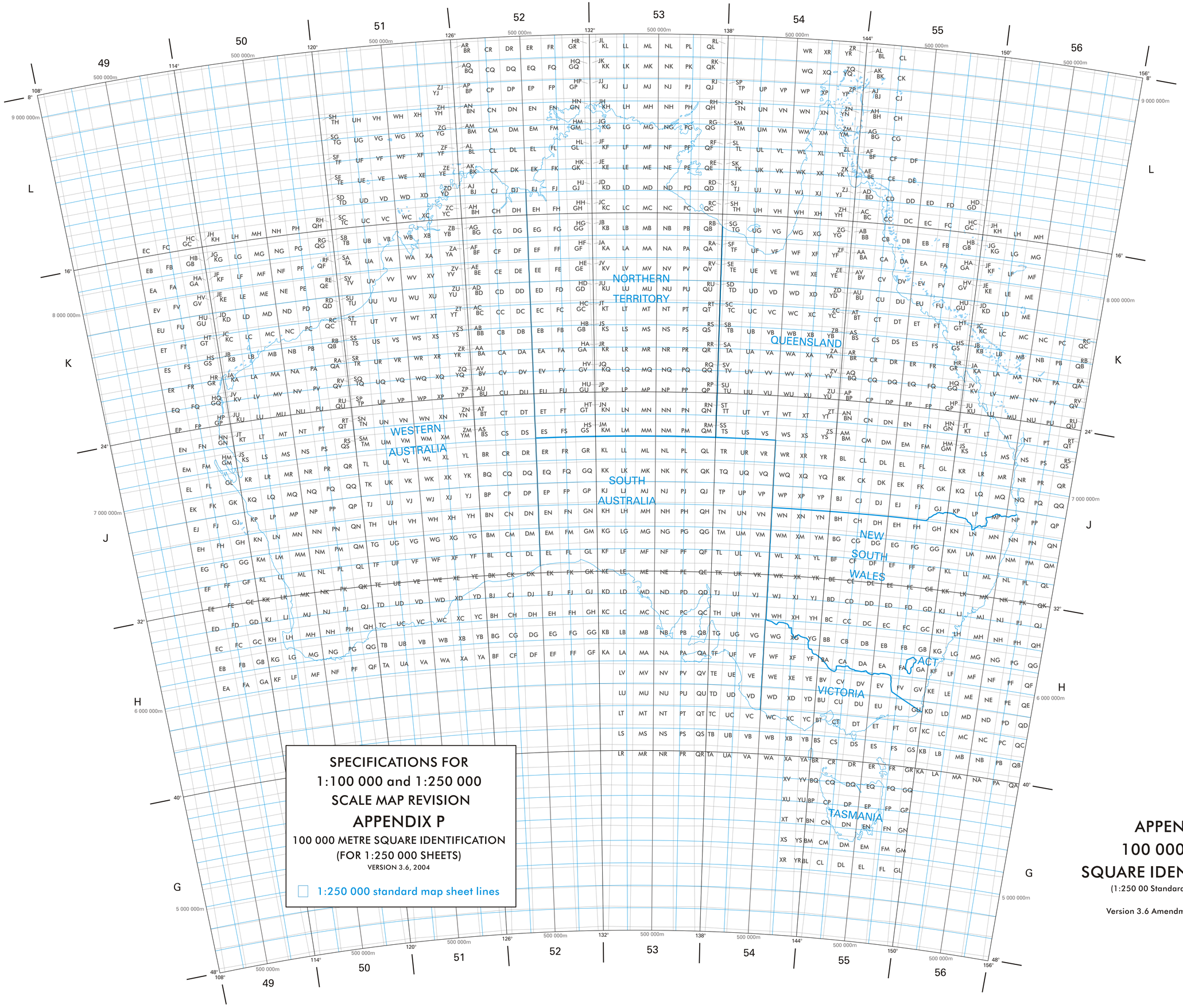
THESE GUIDES ARE SUPPLIED IN PDF FORMAT



APPENDIX P
100 000 METRE SQUARE IDENTIFICATION

(1:100 00 Standard published map sheet lines)

Version 3.6 Amendment 0, 1 July 2004



APPENDIX P
100 000 METRE SQUARE IDENTIFICATION

(1:250 00 Standard map sheet lines)

Version 3.6 Amendment 0, 1 July 2004