NZ Survey Non-Boundary Marks

Title

NZ Survey Non-Boundary Marks

Creator

LINZ - Land Information New Zealand

Date

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Description

This layer provides survey mark information for marks that are not part of a parcel A non-boundary mark is any survey mark that is not on a boundary point. The points in this dataset represent physical survey monuments usually placed for cadastral requirements. The data set also includes geodetic marks. Non-boundary marks now enter the Landonline system predominately as part of a cadastral survey dataset (plan) and occasionally via the geodetic processes. For Cadastral marks (i.e.the majority) its name consists of a mark type and number (and is unique to that survey), followed by the ‘plan’ number e.g. IS I DP 3456; IS II DP3456. Note: Non-boundary marks used to connect cadastral surveys to the geodetic network are those of 6th order (or better) and this subset is available as the NZ Cadastral Survey Network Marks layer. This dataset extends the Landonline stored data by including the network accuracy which is based upon its assigned Landonline order - refer LINZS25006 (http://www.linz.govt.nz/about-linz/news-publications-and-consultations/search-for-regulatory-documents/DocumentSummary.aspx?document=256). The accuracy provided relates to the accuracy of coordinates of the mark and has little relevance to the accuracy of the boundary in relation to other boundaries. For example, if the coordinates of the mark were used to locate it, a user would expect to find the existing mark within the accuracy (distance) stated.

Source

In 1876-77, J T Thomson (first NZ Surveyor General) decided on the system of plane triangulation and coordinates for all New Zealand to address surveying inaccuracies of the time and his meridonal circuit system was implemented over New Zealand in 1877. This standardised the process that had previously been introduced in different provinces. For each meridonal circuit a single triangulation network provided major and minor reference stations with plane coordinates which were related to a zero value for the initial station. The coordinate system was a means to define the position of points for which two values were required. These comprised a distance, in links, north or south of the initial station together with a distance, in links, east or west of the initial station. Note 100 links is equal to 1 chain (20.12 metres). The coordinate axes extended north, south, east and west to the edge of the circuit boundaries. The major disadvantage with the plane triangulation system was that errors were introduced due to the earth’s curvature. These errors which become more apparent when surveys crossed over into adjacent meridional circuit. To accommodate the shape of the earth the geodetic 1949 datum (NZGD49) was established which enabled the network of 'Trigs' (derived from Trigonometric station) which are still commonly identifiable by a black and white beacon situated above the mark. These trigs extended the primary network and enabled the exact bearing relationship between each different meridional circuit to be calculated. This data was captured into the 'Geodetic database in the 1980's. Between the trigs a network of survey traverse marks have long been placed, observed and measured to as part of both geodetic surveying and cadastral surveying. These additional (low order) control marks commonly form the framework to which cadastral boundaries are connected to. A new datum was implemented for New Zealand in 2000. The adoption of NZGD2000 (i.e. the replacement of NZGD49) has allowed closer integration with international coordinate frameworks and navigation systems. In particular, NZGD2000 coincides almost exactly with WGS84, which is the datum supporting the Global Positioning System. This enables GPS-derived coordinates to be used directly with NZGD2000 in most circumstances and was a logical choice for Landonline. The implementation of NZGD2000 required new and existing marks to be surveyed in terms of the new datum. The historical concept of 'orders' was retained with six geodetic orders, from Zero Order (most accurate) to the Fifth Order (least accurate). Mark that were resurveyed or had their positions re-calculated (by capturing existing observed data) had a new order assigned which was a function of the standard (primarily accuracy)of the observation and the order of other control it was connected to. Other coordinates for other existing (1949) control marks were transformed and assigned a low order (7-12) and form the remainder of the Non Boundary marks in this layer. The Geodetic database

continues to manage many aspects relating to these marks but is linked to Landonline and Geodetic marks thus received Landonline orders that reflected their new positional accuracies. In addition to Landonline incorporating the geodetic data, a large amount of survey information was captured off survey plans in pre-designated survey capture areas thus enhancing the number of marks that can be used for cadastral control (6th Order). Subsequent geodetic contracts continually to place and upgrade marks add to the control networks along with other suitable Survey control from Cadastral surveys. In 2010, new accuracy standards were set by the Surveyor General, and some 5th order marks whose positions were originally based on data capture of old (traverse) data were downgraded to 6th order. Note: Cadastral Survey control marks rarely receive an order better than 6th and all other non boundary marks will be orders 7-12.

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Coverage

-52.55508 165.929481383 -29.0387877833 -175.8192488

Coverage

northlimit=-29.0387549833;eastlimit=-170.798063617;southlimit=-52.55508;westlimit=165.88712235

Identifier

https://data.linz.govt.nz/layer/50776-nz-survey-non-boundary-marks/

Type

vector

Language

eng

Subject

New Zealand

Subject

boundaries

Subject

planningCadastre