

Hierarchy of Evidence

As a land surveyor, I work in the field of determining the location of property boundaries almost daily, and as such, being able to determine the correct position of property boundaries is critical in carrying out my duties in accordance with the Laws and regulations that have been set out.

Rule 6 in the Cadastral Survey rules 2021 outlines what the duties are for a Cadastral Land Surveyor when defining a boundary by Survey.

This duty of determining cadastral boundaries is broken down into three key parts.

Firstly, to ensure that you **collect the evidence** which is relevant to the definition of the boundary together with its associated boundary points.

Secondly, to apply all the relevant legislation and rules of law in **interpreting the evidence**.

And thirdly to use the evidence collected, and interpreted to assist in the process of **making a decision** that will determine the correct location of the boundary together with its associated boundary points and the relationship to other boundaries and boundary points.

These three key points gives a clear understanding of the importance of evidence when defining a boundary in a cadastral Survey.

COLLECT THE EVIDENCE

Documents are usually the first source of evidence I look for when I need information about existing boundaries. Examples of the common documents that I look for are Survey or Title plans, as well as Records of Title. Both Survey and Title Plans are invaluable resources due to the detailed depiction of property boundaries, occupation, and mark names.

The second source of evidence is generally obtained through physical survey by searching for evidence of the existing boundary and non-boundary marks. This evidence is in the form of reliable survey marks that can be proven to be undisturbed through their relationship to other marks, either through adoption or physical measurements.

This evidence should be compared with the documentary evidence to prove its reliability.

If the mathematical records do not match the latest survey information obtained, there are still other ways to tell if a mark has not been moved. One way is to check if the records agree with the mark's age, type, and depth. Another way is to see if the mark is upright or if it is attached to a building/structure that is not leaning. A third way is to compare the mark's position before and after an earthquake with the surrounding landmarks or buildings. (NZIS/ICS, 2015)

Due to the fact property boundaries are generally marked with wooden pegs, evidence of old boundary pegs such as wooden pegs can often be difficult to find as they may have rotted away. It is therefore important to be very careful when digging up old marks, as often the best evidence of an old boundary peg in these cases may be a soft spot or a distinct colour difference in the soil in the shape of a peg.

Generally, old steel witness marks do survive longer than the wooden pegs, and these provide a good source of evidence in being able to define the correct location of the boundary position when the boundary mark has not been found.

Additional evidence which can be physically surveyed is any existing occupation or fixed structures as well as natural boundaries.

Other sources of evidence can be old field books, photography or verbal evidence given by property owners.

INTERPRETING THE EVIDENCE

With all the evidence collected, the second step to carry out in fulfilling my duty as a land surveyor is to be able to interpret the evidence by applying my understanding of any relevant laws and regulations that may be pertinent to the information I have captured.

To be able to do this, it is important to remember the concept of the “hierarchy of evidence”.

The hierarchy of evidence is a “tool” that we as surveyors should use to determine the most reliable evidence of a boundary position when defining or redefining boundaries. The general idea behind the hierarchy is that certain types of evidence are more likely to help reflect the original intention of those who created the boundary than others.

“This ranking flows from the proposition that most weight should be given to those matters about which a person is least likely to be mistaken” (Dale. 1976)

The hierarchy of evidence should be used as a guide that should be applied with professional judgment and common sense.

The order of Hierarchy is as follows:

- **Natural boundaries**

These are boundaries defined by natural features, such as rivers and coastlines. Natural boundaries hold the highest rank in the hierarchy as they are usually the most reliable evidence of a boundary position, and they are unlikely to be the cause of a dispute. Natural boundaries however may be susceptible to erosion, accretion, or avulsion, which may affect their location and shape.

- **Original (undisturbed) monuments**

These include original boundary marks, as well as non-boundary marks.

Boundary marks are physical marks or objects that were used to indicate the boundary position at the time of the original survey or subdivision. Examples of these monuments include pegs, posts, discs, etc. An interesting example of an old boundary monument from my experience in South Africa, would be that of a large stone cairn. Although these old types of monuments may not be very common, the intention behind their use is clear, and as such, original undisputed monuments are a reliable source of evidence of a boundary position, as they clearly show the intention of those who created the boundary. These

monuments may also be subject to deterioration or destruction, which may affect their accuracy and reliability.

Non boundary marks assist in indicating the position of a boundary position indirectly through an adopted vector shown on an existing survey plan.

In rural settings, where I do most of my work, non-boundary marks are typically easier to locate than the old boundary marks, as these are often steel marks that have been buried and placed in locations that will allow the mark to survive. This is because they are generally placed away from the boundary and any potential occupation that may be subject to change, or ground disturbance.

In an urban environment however, older non-boundary marks frequently face destruction due to new development projects or the installation of infrastructure for various services.

- **Original undisputed occupation**

This is the evidence of the actual use and possession of the land by the owners or occupiers of the parcels. Some examples of occupation are buildings, fences, and hedges.

Occupation such as a fence line which between two adjacent properties is reliable evidence of a boundary position, as it reflects the practical implementation of the boundary by the people who own or occupy the land.

Over time however, occupation may be subject to change and be the cause of a dispute, or ambiguity, which may affect its relevance and credibility.

- **Abuttals**

These are the descriptions of a land parcel by reference to what it is adjacent to, such as other parcels or roads. Abuttals are a less reliable evidence of a boundary position, as they depend on the descriptions and the identification of the adjoining features.

However, abuttals may also provide useful information and context for the boundary definition, especially when other evidence is lacking or conflicting.

- **Calculations**

As a surveyor who deals with measurement and calculations, it may seem strange to find that these items rank at the bottom of the hierarchy of evidence.

Calculations are made using adopted data from underlying survey and title plans that have been recorded by surveyors in the past.

It is always important to note that the information from these plans is only as reliable as the tools or methods used to record the information, and as a result it is likely that the data we might collect with modern survey equipment may differ at times from that which is recorded on old plans.

From my experience of surveying in New Zealand, I have gained an understanding that calculated positions are not perfect and there may be large misclosures in boundaries, especially within old rural surveys.

By having an understanding that your calculated values for the boundaries you might search for can be inaccurate, it encourages you to expand your region for searching for any evidence of an old boundary mark. Upon finding an existing mark it is important to remember to prove that the position of the mark is reliable. This can be done by comparing its relationship to other marks that have been found.

MAKING A DECISION

After all evidence has been collected and analysed, the next step is determining the best way to define the existing boundaries and boundary positions. It's crucial to emphasize that my decision-making process involves considering all evidence to ensure confidence in my decisions. This prevents potential invalidation by subsequent discoveries from other surveyors favouring a different outcome.

Respecting the rights of adjacent owners is essential in my decision-making. It is important to exercise caution to avoid disrupting established occupation limits. In case of a dispute, my role is limited to advising the involved parties and offering my opinion on the boundary's correct or fairest position.

In conclusion, the Hierarchy of Evidence serves as a framework guiding us as land surveyors as we fulfil our duty to make decisions regarding boundary locations. As we work through our duties, we are to diligently navigate this hierarchy, relying on primary sources of evidence such as survey plans and field measurements to ensure accuracy in defining property boundaries. By doing so we will make informed decisions that uphold the integrity and correctness of cadastral boundaries. By prioritizing the hierarchy of evidence, we not only protect property rights but also maintain the credibility of our findings, thereby fulfilling our duty of ensuring that we make accurate decisions in the defining of boundary positions.

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