

Educational Corner "Stones"

Witness Monumentation

By David Norgrove, OLS, Manager, Survey Review Department

Over the past year, the Survey Review Department Committee discussed and considered, at length, the use of witness monumentation in an effort to provide direction and foster a more consistent approach by all cadastral members. The Survey Review Department discussed these issues with a significant number of member "firms" to fully appreciate their rationale in not complying with the "witness" provisions of O. Reg. 525/91 (under the Surveys Act, R.S.O. 1990, c. S.30). The Committee considered their collective comments and this article voices the resulting position of the Committee and the Department.

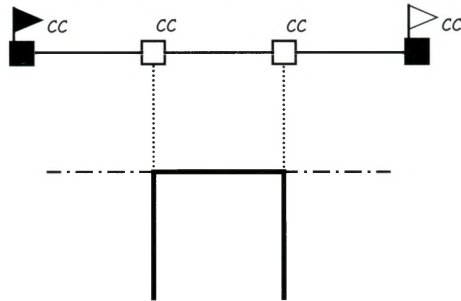


FIGURE 1
Could the actual front corners have been monumented? Are there any obstructions? If so, they should be noted on the field notes and on the plan itself.

landowner without clearly defined property corners, which can contribute to a deterioration of the boundary fabric as well as the professional image of the surveyor.

In the Winter 1995, edition of *The Ontario Land Surveyor*, the writer gave an overview of misunderstandings identified by the Department, with respect to the monumentation regulations set out by O. Reg. 525/91. In summarizing the requirements set out by Sections 11(5),

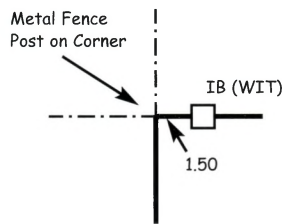


FIGURE 2
The physical obstruction which causes the corner to be witnessed is clearly shown. The resultant "witness" monument meets the standards by being on the limit and being not less than 1.0 metre distant from the witnessed point.

(6), and (7) of the regulation, it was stated:

Clearly, "witness" monuments should occupy a limit of the survey if

possible, be no closer than one metre distant from the corner witnessed and be identified as "WIT" on the face of the plan with the "witness" dimensions relating to the corner clearly shown.¹

Two categories of non-compliant witness monuments can be easily identified. Monuments which are newly planted as witnesses without complying with the conditions set out in O. Reg. 525/91, and

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"...circumstances that leave the client landowner without clearly defined property corners, which can contribute to a deterioration of the boundary fabric as well as the professional image of the surveyor."

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"The Department continues to find the implementation of provisions for planting witness monumentation stretched far beyond the flexibility inherent in the regulation."

One of the most common sources of frustration encountered by the Department, as observed during the Systematic and Comprehensive Review process, and as expressed by fellow surveyors during the office visit, is the proliferation of monuments that inappropriately "witness" parcel corners. When such monuments are found, a firm must accept and perpetuate this substandard monumentation, or plant another monument at the actual corner. Both options create circumstances that leave the client

found monuments used as witnesses to a corner without legitimate reason.

The first category includes setting cut crosses on offset lines outside the limits of the surveyed lands in lieu of the required corner monuments [Figure 1]. In some instances, the cut crosses are not even on a production of the parcel sideline. In either case, the monumentation is incomplete, and the landowner client is left with the task of determining the position of the front property corners from the dimensions shown on the plan. The front property corners on a SRPR/plan of survey, etc. need be monumented, unless physical impediments, such as, asphalt driveways, fence posts, etc. make it impossible. It is recommended that any physical feature making it impossible to plant a monument and causing applica-

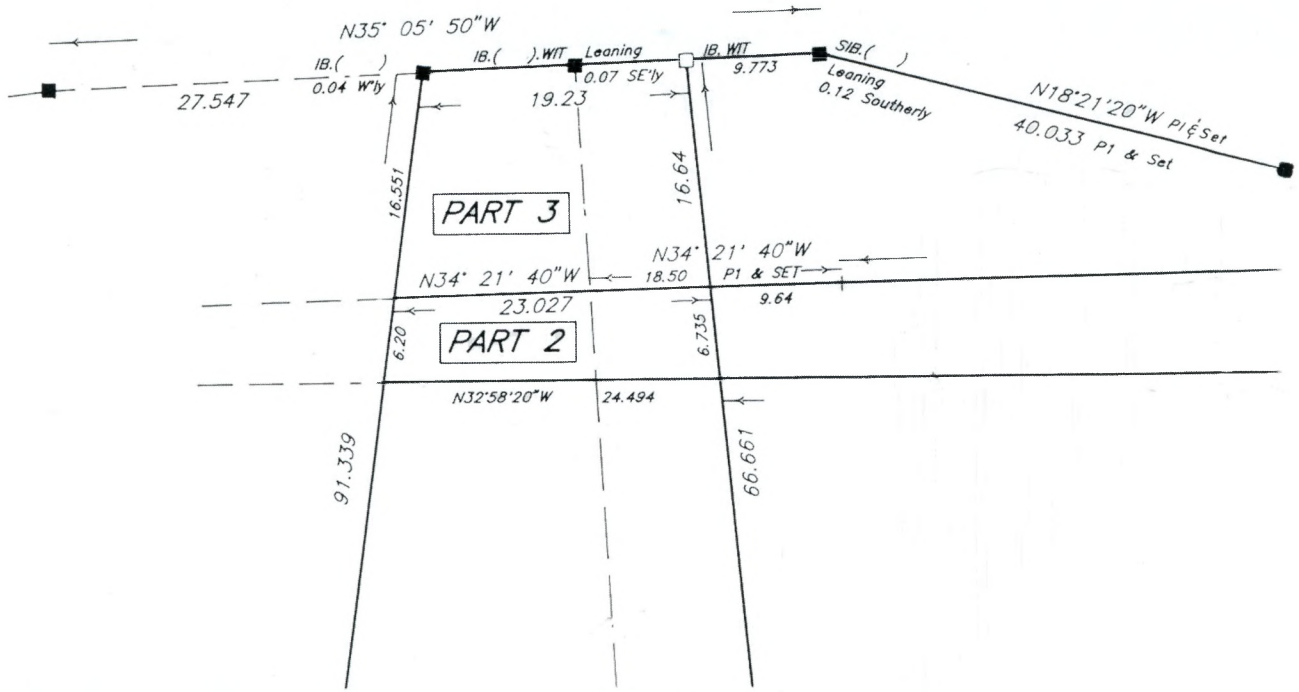


FIGURE 3

All found evidence originates from a prior reference plan by the surveyor signing this plan. Why were the leaning monuments not reset or adjusted? Part 2 defines the extent of a pre-existing easement. The planted I.B.(WIT) serves as witness to at least five corners which is certainly non-compliant. Why were these points not set? Economics?

tion of the "witness" monumentation provisions, should be stated on the plan face and recorded in the field notes [Figure 2].

Other examples of non-compliance result from rushed field survey practices that have not given sufficient consideration to the boundary retracement, or from unverified field computations and/or monument layout. When the project is calculated and finalized in the office, these surveys result in the final corners being "re-established" at locations in conflict with the monumented points. Rather than return to the field to finalize the monumentation by adjusting the offending monuments in accordance with the requirements, small offset distances, not sanctioned by the regulation, are quoted on the plan. Simply planting a monument in a fence line with no intent to monument the nearby corner and calculating the witness dimension subsequently for the plan is also substandard. For each of the previous examples, the resultant monumentation is not compliant and the client is left with monuments that do not mark the parcel corners. They are left with the task of determining the position of the corners on the ground

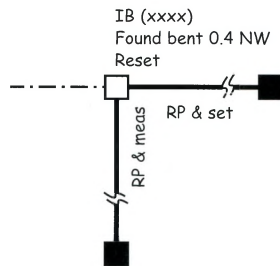


FIGURE 4

The found I.B. has been replaced using proper retracement methods and the monumentation both before and after the survey has been clearly illustrated on the plan.

themselves. Other local survey firms that adhere to the requirements are put at a competitive disadvantage.

The regulations are very specific in permitting "witness" monuments only where it is:

... impossible or impractical to plant a monument required by this Regulation or permitted by subsection (1) because of the nature of the location of the point ...²

The Department continues to find the implementation of provisions for planting witness monumentation stretched far

beyond the flexibility inherent in the regulation. The provision for "witnessing" should stem from the necessity to address physical site circumstances, not as a quick fix of inadequate field procedures or as a method to expedite the completion of the survey. If the crew needs to return to the site to monument the actual corner or adjust monuments not occupying the intended retraced angle, then this additional step must be taken to complete the survey. Economics, i. e. location of the site relative to the office, and/or project budget, etc., must not impact the quality and completeness of the end product provided to the consumer nor the inherent professional responsibility of the signing surveyor.



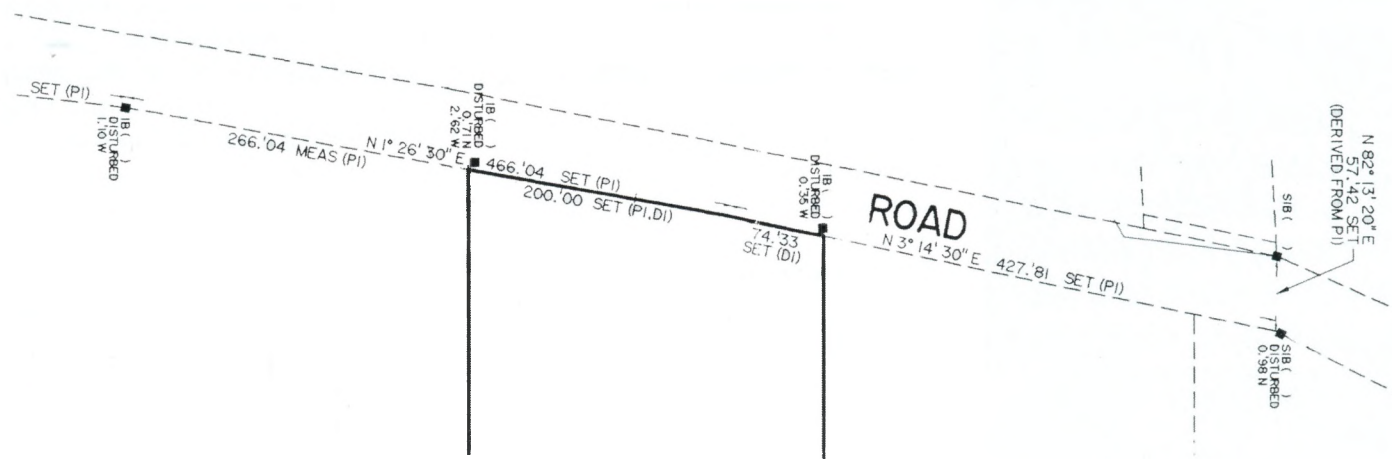


FIGURE 5

This SRPR was performed on top of a reference plan by the same surveyor. The found evidence noted as disturbed was set previously by the same surveyor. Why were the disturbed monuments not adjusted or reset? Why was the bend in the front limit of the parcel not monumented? Economics again? The survey fabric has not been up-graded by the just completed S.R.P.R.

In the case of found monuments ultimately shown to "witness" a re-established corner, there are primarily two types; those that are "bent", and those that are shown to be "disturbed". While the writer recognizes that bent monuments are often designated or described as "disturbed", for the purposes of this discussion a distinction is drawn. In the case of the monument that is found bent, the Department finds a variety of practices, which include:

- Field measurements to the top of the bent bar, with subsequently calculated ties shown on the plan to "witness" the top to the re-established corner.
- Field measurements to the straight portion of the bent bar, (which is often accepted as the corner), with subsequent illustration on the plan as merely "bent", or with ties to "witness" the re-established corner.
- Field measurements to an undefined point on the bent monument, with "witness" ties shown on the plan to that undefined point. [Figure 3]

As stated previously, the client is left with monuments not marking the parcel corners, and monumentation that is neither compliant with witness monument regulations, nor the requirement of O. Reg. 525/91, s.4 (1), that, except in special circumstances relating to easement surveys and SRPR surveys:

In every survey of land that defines, locates or describes a line, bound-

ary or corner of a unit of land, the surveyor shall plant a monument,

- (a) *at every angle or corner on the line or boundary;*

[Figure 3]

It is the view of the Committee and the Department that the bent monument [Figure 4] must be replaced by a new monument. To provide clear notice to subsequent surveyors that revisions to the monumentation record have occurred, the full and complete details of this monumentation change would be recorded in the replacing surveyor's field notes and on the plan. Of course, a subsequent surveyor would also be placed on notice by a routine inspection of the monument for identification markings. Found monuments shown "disturbed" and "witness" to a re-established corner, usually result from rejection of the found monument because it does not coincide with a re-established position for the corner as derived from other evidence. The Department's review of file material, and field examinations, usually places these "witness" monuments into one of five categories.

- 1) Monuments are suspect as "disturbed" due to physical observations in the field such as the monument is leaning, is beside a new utilities plant or fence post, is on an unstable slope, or other such circumstance.
- 2) The research material contains local, direct, and definitive reference tie

information to physical features that clearly and consistently prove that the found monument does not represent the corner being re-established.

- 3) Similar to category 2), it is apparent from the nature of the ties and methodology shown in the field notes for the planting of the monument, that the monument has been moved to another location.
- 4) It is apparent from review of the survey record research that the found monument was planted in error.
- 5) Monuments shown as "disturbed" are often found to be completely vertical with no apparent reason to believe that the monument has been moved, such as underground utility construction. Most often, it appears that the monument merely does not fit the mathematical calculation of the location of the corner.

Only categories 1), 2), and 3) are legitimately designated as "disturbed." Categories 4) and 5) indicate situations where the monument may be rejected in lieu of other "best evidence" but this must be rationalized and illustrated by other means. The monument may not be accepted, but it is not "disturbed."

If the found monument intended to re-establish a parcel corner is determined to have been physically disturbed then the offending monument should be replaced. It should be adjusted only if the monument stems from a previous survey by

"The use and reliance upon the found monuments by the affected landowners must also be considered and weighed..."

your own firm. [Figure 5] Keep in mind that monuments should be replaced only if the point of retracement is not in dispute. The determination of a monument as disturbed must entail a reasonable level of certainty that it is not where the original surveyor planted it due to a subsequent event.

If the found monument was laid out with the intent to mark a new corner or line, i.e. it is an "original post"³ and it cannot be reasonably said to be disturbed, the principles of an original monument in its original position must be applied. Acceptance of the monument as the corner may require the rejection of witness ties shown on other plans.

In circumstances where the monument was planted to create a new limit intersecting with a pre-existing limit, its position may control the direction of the newer limit, yet not be at the actual cor-

ner. In this case discretion must be exercised before replacing a monument and it would be advisable to contact the original surveyor.

The use and reliance upon the found monuments by the affected landowners must also be considered and weighed as part of the process for their removal. Where monuments are removed, the details of their origin, found location, and how they related to the final monumentation of the corner must be documented in the field notes and on the plan, and if applicable, a record of the permission for removal should be retained in the file.

"...to ensure that the landowners' interests are best served by monumentation..."

A further circumstance of inappropriate "witnessing" occurs when a landowner places an iron pipe at the surface to mark a corner monument that is buried; particularly when the corner has been monumented by an iron pipe. Too often, a field survey locates and refers to the surface marker, rather than the actual corner monument, with the inevitable "witness" ties resulting. Often, digging at the appropriate location adjacent to the

marker pipe will reveal the correct monument, at the correct location.

In summary, provisions of the monumentation regulation are sufficiently flexible to permit adequate monumentation of a corner except where some structure pre-exists the location, or is less than 15 cm below the surface. We must remain vigilant in our use of the "witness" monumentation provision in cases where there is no alternative and not as a solution for monuments "set" inappropriately or as a method to expedite the completion of a survey. We must also give appropriate recognition to the requirements for proper field retracement and layout or verification procedures, to ensure that the landowners' interests are best served by monumentation that avoids a need to determine a corner from a monument nearby, or sort out a corner from a variety of objects. A concerted and co-operative effort between surveyors would minimize the number of nuisance "witness" monuments and multi-monumented corners, and improve the quality of the boundary fabric as well as the image of the profession.

ENDNOTES:

1. Norgrove, David J., Educational Corner "Stones" - Monumentation. (1995). 38(1) The Ontario Land Surveyor, p. 24.
2. O.Reg. 525/91, s. 11(5).
3. Surveys Act, R.S.O. 1990, c.S.30, s.1.



Sites to See

Thinking of creating your own web site? The following is a list of web sites of member firms in Ontario who may be a source of information and advice. If your firm's web site is not listed here and you would like it to be, please contact the Association office. Every effort has been made to ensure that the addresses shown are correct and up to date. No endorsements are implied.

Marshall Macklin Monaghan Ontario Limited

<http://www.mmm.ca>

A. J. Clarke and Associates Limited

<http://www.ajclarke.com>

J. D. Barnes Limited

<http://www.jdbarnes.com>

Archibald Gray and MacKay Limited

<http://www.agm.on.ca>

Ashenhurst Nouwens Limited

<http://www.homesontario.com/ashenhurst.htm>

Izaak de Rijcke

<http://www.mgl.ca/~boundary>

Payette Himma Delorme

<http://magi.com/~phdsurv>