

A Boundaries Act Hearing

BY G. R. WILSON

Cadastral and Engineering Surveys Committee.

STATUS OF COORDINATES AS SURVEY EVIDENCE

In the matter of the Boundaries Act
AND

In the matter of an Application for confirmation of the true location on the ground of the boundaries of certain public highways.

This is an Application made by a Corporation for the purpose of confirming the boundaries aforementioned as shown in heavy, solid lines on several draft plans of survey, signed by Surveyor "A" dated 1971.

At this time there appeared before me:

Surveyor "A", O.L.S., Surveyor who signed the draft plans of survey
Surveyor "B", O.L.S., Surveyor of a Municipality
Surveyor "C", O.L.S., Surveyor within a Federal jurisdiction.

Surveyor "A" was placed under oath, identified the draft plans before the hearing, verified his signature set thereto in the Surveyor's Certificates, and explained in general terms the survey method by which he re-established the boundaries under Application. He stated that the boundaries as monumented on the ground and illustrated by heavy, solid lines on the draft plans before the Hearing were, in his opinion, re-established by the best available evidence of their original positioning.

Both written and oral Objections to the Application were received as follows:

Objection No. 1

Prior to the Hearing a letter of objection was received from Surveyor "C", dated 1972, concerning Federal lands adjoining the boundaries of a highway as shown on one of the draft plans.

Surveyor "C" appeared before me stating that his employer was not objecting to the confirmation of the boundaries of a certain highway under Application, but rather to the designation of ownership on the south side thereof at its easterly extremity. Surveyor "C" further stated that the draft plan indicates the easterly limit of Park Lot, Plan "X" as being the limit of ownership between his client and the municipality. His client objects to this indication of ownership for the

reason that they believe they have title to approximately the easterly 33 feet of the Park Lot, according to Registered Plan No. "X" by a deed, prior to the registration of Plan "X" registered in the Registry Office for the County of York on May 1, 1852 as Instrument No.....

Surveyor "C" explained to the hearing that although the present occupational limits of his client's lands were defined by a post and wire fence accepted by Surveyor "D" in 1945 for his survey of Registered Plan "X" as defining the limit between the Railway lands and the newly created Park Lot, his client was claiming title to the westerly boundary of lands in Instrument No. aforesaid, which in this area is described as 72 feet westerly and parallel to the centreline of tracks.

As the Objection does not relate to the position of the boundaries under Application, it was suggested and agreed to by Surveyor "C" upon behalf of his client and by Surveyor "A", the Applicant's surveyor, that the objection could be satisfied by the deletion from the final plan of the line shown as extending southerly from the easterly limit of the Road, and this deletion I DO SO ORDER. This would leave the final plan silent as to the limit of ownership between the municipality and the lands of Surveyor "C"'s client.

Objection No. 2

Prior to the Hearing a letter of objection, dated October 30, 1972, was received from a firm of _____, Barristers and Solicitors, signed by _____, upon behalf of Sadie P _____, one of the owners of No. _____ F _____ Parkway. This objection was withdrawn on November 8, 1972 by a telephone call from _____ the same firm of solicitors. Sadie P did not appear before me nor was she represented by counsel.

Objection No. 3

Prior to the Hearing a letter of objection, dated October 30, 1972 was received from a Municipality, signed by Surveyor "B", Chief Surveyor, as to the boundaries of a certain highway.

Surveyor "B"'s Corporation is the owner of lands adjoining the northerly and southerly boundaries of the highway near its westerly extremity and also has jurisdiction over an abutting public highway.

Surveyor "B" appeared before me representing his Municipality stating that

his Surveys Division had checked the draft plan before the Hearing, illustrating the boundaries of the highway with a previous survey of said highway and lands at the westerly extremity, performed for his Corporation, and deposited in the Registry Office for Toronto Boroughs and York South as Plan 64R—....., and this comparison had disclosed certain differences.

These differences were set out in the formal letter of objection and a copy of the draft plan of said highway attached thereto, and are expressed as differing x and y co-ordinate values related to Metro Toronto's co-ordinate control system, shown or implied by both plans for supposedly identical legal survey corners. The magnitude of these differences range from 0.01 feet to 0.06 feet in northings and eastings.

Surveyor "A" gave evidence that he had found three undisturbed survey monuments on the south boundary of said highway, one at the south-east corner of said highway and the other two approximately 701 feet and 821 feet respectively westerly therefrom, and from these monuments he had re-established the northerly and southerly boundaries of said highway and had re-set the disturbed or bent survey monuments, all as shown on Plan 64R—..... His survey was tied into the undisturbed control monuments situated on certain highways, and from their known co-ordinate values, he had generated co-ordinate values for each survey monument planted or found and had expressed these values on the face of the draft plan.

On examination by Surveyor "B", Surveyor "A" agreed that the intention of the subject survey was to re-establish by the best available evidence the boundaries as illustrated on Plan 64R—.....; —that Plan 64R—..... represented a co-ordinated survey; — that the purpose of a co-ordinated survey was to position points on the surface of the earth; and that it is an acceptable survey practice within the Metropolitan area to tie into and utilize Metro's network of control survey monuments, where available.

Concerning the subject survey, Surveyor "A" stated that he had a copy of Plan 64R—....., which does not indicate co-ordinate values for the legal survey points, but had he known of the co-ordinate values assigned to these points by Metropolitan Toronto and of record in their files and available to the public, he would have accepted and have shown these values on his plan, as the difference between the two sets of values — — are of such a minor nature and within the allowable error for this type of survey as not to warrant indicating an opinion to the contrary.

Surveyor "A" further stated that he considered the points he found and set in his survey to be in the same position on the surface of the earth as those shown on Plan 64R— and that the differing co-ordinate values for those points merely represented two different opinions as to their mathematical position relative to the control monuments.

When asked for an opinion as to the relative accuracy or circle of error allowable for this type of survey, Surveyor "A" stated that a circle of error of radius 0.05 feet around the point was considered by himself and a number of survey authorities as generally acceptable, and that all points within that circle as expressed by co-ordinates for all practical purposes are considered to be one and the same point on the surface of the earth and are so indicated on plans of survey. Surveyor "A" also stated that he did not know the maximum and minimum acceptable error in relative positioning for this type of survey, but did offer the opinion that an error greater than 0.05 feet might indicate a difference in positioning on the surface of the earth, in which case an attempt would be made to resolve the differences by discussion with the appropriate survey firms or bodies.

In an effort to resolve the objection by Surveyor "B", Surveyor "A" stated that he was prepared to show on his final plan of the highway, Metropolitan Toronto's co-ordinates for the legal points that he had re-established.

Surveyor "B" 's submission was that Plan 64R— correctly reflects the true position of the boundaries of the highway and the various legal survey points — that these points were co-ordinated into a network of control survey monuments whose position was and can be verified by local reference ties — that the best available evidence of any lost or disturbed points on Plan 64R— are their known co-ordinate values (witness distances) to these primary witness control monuments — that the three monuments on the south side of the highway which the Surveyor arbitrarily selected as witnessing other points, as well as the other survey monuments which the Surveyor did not select, are, in fact, secondary witness monuments to the various survey points, as these monuments are subject to ground forces which disturb and move them without the Surveyor being able to determine which ones have moved and in which direction. Therefore, Surveyor "B" submitted that all the monuments found or set by Surveyor "A" should be moved in position to correspond with Metro's co-ordinate values for these legal survey points.

Surveyor "B" further stated that

the problem from a survey standpoint, as he saw it, was to determine if a circle of error of radius 0.05 feet was, as stated by the Surveyor, in fact, an acceptable level of tolerance in positional accuracy, and if so, then Metropolitan Toronto would be willing to accept this, but differences greater than 0.05 feet would then represent two positions on the surface of the earth, in which case Surveyor "B" maintained that known co-ordinates should prevail as best evidence for the reasons stated above.

We have two problems before the Hearing as I see it; one is to determine the principles of retracement in a co-ordinated area, and the other is to confirm under The Boundaries Act, lost lines.

Concerning the principles of retracement, co-ordinates are one item in a list of evidence that can be used to re-establish a lost corner, and cannot be considered best evidence, if better evidence is available.

If the monument is missing or disturbed, its position must be re-established by the best available evidence, and it remains with the surveyor to search for, find, assess and determine the best available evidence that the nature of each case admits. The Common Law is quite clear in its instructions to surveyors concerning the relative weights of survey evidence. A table of weights is summarized in Greenleaf on Evidence, page 441 and page 442. Dodd J: " on this principle the things usually called for in a Grant, that is, the things by which land granted is described have thus been marshalled: First, the highest regard had to natural boundaries: Secondly, to lines actually run and corners actually marked at the time of the grant: Thirdly, if the line and courses of an adjoining tract are called for, the lines will be extended to them, if they are sufficiently established: Fourthly, to courses and distances giving preferences to the one or the other according to circumstances."

Thus, least weight is to be given to measurements, and co-ordinates are a form of measurement, although generally superior from a technical point of view to conventional measurements.

Measurements always have provided us with a method of arriving in the area of the original monument, and as measurements become more accurate and measuring techniques more sophisticated, we can say with greater certainty where we believe an original monument was located. Therefore, measurements within Co-ordinate Systems will probably assume greater importance as evidence than they have in the past and Courts may rule that they are not to remain at the bottom of the list of priority of evidence assessment. Measurements within

Co-ordinate Systems may take precedence over unclear or ambiguous secondary evidence where it becomes reasonable to presume that the secondary evidence may, in fact, be disturbed and reasonable to presume that the accuracy of the co-ordinates is more likely to provide a true repositioning of a lost corner.

Concerning the second problem before the Hearing, that of confirming under The Boundaries Act the true position on the ground of lost lines, the applicant's surveyor, , gave evidence that the boundaries of the highway and points thereon have been re-established by the best available evidence of their true position as shown on Plan 64R—. The objector's surveyor, Surveyor "B", submitted that the difference in co-ordinate values of the various survey points as shown on the draft plan and on Plan 64R— indicates that Surveyor "A" did not re-establish these points in the same position as indicated on Plan 64R—.

To comment on Surveyor "B" 's submission one would have to know what is an acceptable error in relative positioning in an integrated control survey area. The Surveyor's evidence was not conclusive in this regard and there are no statutory regulations to assist me, other than those particular sections of the Regulations under the various Acts which control the quality of plans of survey entering the land registration system, e.g. The Land Titles Act, etc., and which sections set out the maximum allowable error in respect to closeable figures. In my view, the differences in co-ordinates as noted by Surveyor "B" are well within the allowable errors as set out in the various Regulations aforementioned.

The differences in co-ordinates are of such a minor nature and could occur in the measuring and balancing of co-ordinate loops between control monuments and would, in fact, be merely differences in opinion by the two surveyors as to the co-ordinate values of the same points on the surface of the earth.

When and if in the future confirmation of co-ordinates in an integrated co-ordinate control area is sought under The Boundaries Act, it will probably be necessary to formulate rules of procedure and set out maximum allowable differences in positional accuracy for guidance to Surveyors working in these areas, but until that occurs, I can only be guided by the existing Regulations and acceptable survey practice.

Having considered all the evidence in connection with the Objection by Surveyor "B" and for the reasons set out above, in my view, insufficient evidence has been presented by the Objec-

tor to refute the evidence of the Applicant's surveyor that he has re-established the boundaries of the highway by the best available evidence of its true position and, therefore, the Objection by Surveyor "B" must fail and I DO SO RULE.

Having given full consideration to all the evidence before this Hearing and for the reasons set out in this Order, in reliance on all the material filed in connection with the Application, on the evidence adduced and the law applicable,

I DO THEREFORE CONFIRM the true location on the ground of the boundaries of _____, as shown by heavy, solid lines on fourteen draft plans of survey, signed by Surveyor "A", Ontario Land Surveyor, twelve of which are dated November 5, 1971 and two of which are dated December 3, 1971 and December 8, 1971 respectively.

I DO ORDER that the final plans of survey be prepared by the Applicant's surveyor to the satisfaction of the Director, Legal Survey Branch, to be registered in the proper Land Registry Offices as prescribed by Section 16 of The Boundaries Act.

I DO FURTHER ORDER that the costs of this Application be borne by the Applicant in accordance with the undertaking in the formal Application.

DIRECTOR OF TITLES