

The Making of Field Notes (A Short Review of What It Takes)

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INTRODUCTION

In planning the Party Chief Seminars Nos. 1 through 7 it was assumed that the concept would be one of revision and review to remind those attending of what was expected of any survey-trained person; - their duties, responsibilities, priorities, required skills, required knowledge, required capability, conduct and commitment to the furtherance of the enhancement of the Survey Profession in the eyes of the public and our allied professions. The standard was set at the Party Chief Level because of the position he/she has in influencing the standard of competence by all members of the Survey Profession, and it was presumed that all of the information discussed would be taken into effect and passed on to succeeding Party Chiefs. This presumption was amply rewarded when both the Practice Advisory Committee and the Survey Review Department (SRD) noted a definite improvement in the calibre of field notes and plan details.

However, as with all professions, constant vigilance on the part of supervisors is a necessity to uphold standards and without the continuing leadership of them, standards do tend to deteriorate. During the last three years the calibre of plans has maintained a reasonably good standard, due of course to the Survey Review Department's monitoring. The same cannot be said about the quality of field notes which have begun to take the form of dots and dashes with numbers scattered hither and yon all over the notes in a haphazard order which only the originator can decipher - maybe. The use of the Data Collector and the Field Survey Computer to collect and store survey data can be most advantageous when used as an adjunct to field procedures, but, they do not replace the pictorial view that good field notes show.

Field notes are the most important part of any survey because they are the record for all time of what was done on the ground, when it was done and why it was done.

The "why it was done" is the main theme of this short article, because most field notes fail to indicate all of the information necessary for the reader to fully understand the reasons for setting monuments where they were set. The plan of the survey can only show what the field notes indicate at the time the field notes were made; any other measurements and any other monumentation on the plan that is not shown in the field notes constitute fraud, unless noted by specific reference to documents on public notice.

With this in mind, a short review of what constitutes the standard for field notes is a necessity.

NARRATIVE

Field notes are the record, arranged in a manner that is peculiar to surveying, indicating pertinent data and information, measurements and observations, made in the field during the conduct of a survey. They must stand by themselves as a clear and true reflection of what was actually done free from any ambiguities or distortions of fact. They must be self explanatory, honest, self-checking, complete, neat, legible, clear, concise and capable of no misunderstanding.

The many reasons why this should be so include the fact that your field notes will be used by many other people. They will be used by: the Supervising Surveyor to check the data and survey methods used; the office staff to produce the plan of survey; other surveyors to extend or subdivide the survey fabric you have created; and, sometimes by the judging authority of the SRD, the Director of Titles under a Boundaries Act Hearing, or a court of law.

There are some in our industry who are electronic-computer oriented to the degree that all of these concepts have been thrown out the window, and with E.D.M. and Data Collector in hand they rush out to the project site, tie all they can see from a floating point, get back to their desktop computer and manipulate the data to suit their pre-conceived notion of what the survey plan should look like, without ever making any required checks on the ground.

This scenario is just a disaster looking for a place to happen. The use of an E.D.M. and Data Collector has helped to speed up the measuring process, and the recording of those measurements correctly, to a great degree, but, we must use these instruments wisely and in perspective.

COMMENTARY

The first component in a survey is the re-establishment of a selected baseline upon which the remainder of the work will be designed. This can be at times the most difficult part of the work.

Finding three or four monuments in the middle of a block of twenty lots bounded by established roads does not establish a street line. Re-establishing the street line from the data in the original field notes which first established the street line does. Where monuments are located at the ends of the block, and where physical measurements to other survey data agree with the original work, we can be certain we have the correct alignment, even though the monuments in between these points are a little "higgledy-piggledy" from a straight line. This is the major point of the exercise, so show all of this in your notes. Remember that field notes must stand by themselves as an entity - no recourse to previous notes by saying - see notes of Jan 31, 1992. All that does is to make anyone using your notes have to request more copies

of previous notes "ad nauseam". What you should show, for example, is "100.5" Plan and meas." or "100.5 Field Notes S.51.675 and Meas.". This type of notation does two obvious things. It shows that you have used the research data correctly and it shows that you have indeed measured the distance. It saves time in the long run as the reader of the notes does not have to rummage through the file to find and compare the data.

The *Standards for Surveys* makes the point that where the present measurements differ from previous recorded data, the present measurement and the previous recorded measurement must be shown. If you agree with the previous recorded measurements then why not say so. It gives substance to your work and negates the problem of the reader of your notes having to compare data. This is in keeping with the concept of field notes being an entity and capable of standing by themselves.

One of the many problems when perusing a Plan of Survey is that of seeing a monument on the face of the plan, literally in limbo, with no distance or bearing to it. How can the user of the plan find it? In all probability the field notes may show it was used in the determination of the alignment of a boundary but no distance was measured to it. Again, the plan can only show what the field notes show. It is imperative that you not only identify that particular monument by indicating where it came from, its size and reference, but also its location with reference to the survey fabric created for the present survey. Someone else, who uses your notes, will need to know its location in attempting to duplicate your work. In addition to this, if the monument is a lot corner, label that location on the field notes. If it is the corner of a reference plan, or of a Part on a reference plan, then detail this fact. As well show the distances used to verify that it is in the location your notes indicate it to be.

Another problem noticed in the checking of field notes is the lack of detail respecting underlying documentary data, and explanations respecting the type and condition of fencing, walls, concrete curbs, paving and overhead wires. As with any topographic feature shown in the field notes, the various

points must be capable of being defined by a co-ordinate value with some degree of accuracy - the beginning and end of a fence, the extent of paving, etc. These items are especially required due to the many problems associated with actual possession on the ground.

The question of how much underlying survey and title data to be shown on each page of the field notes revolves around the earlier comment that field notes must stand by themselves as an entity, and the concept that the plan can only reflect the data shown in the field notes.

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If you consider the details of the Standards for Plans and review what the plan must show then the answer is clear. You must show the geographic data indicating lot lines and limits of ownership as set out in the documentary data - and this does include street and road widenings, street and road names as originally shown on plans together with any changes in designation by By-Law etc. (and do not forget to check what the street sign says). The one item of documentary data that you must show is the Instrument Number which describes the parcel you are surveying.

Some note-makers have adopted the practice of outlining the boundaries of the parcel under survey with a coloured pencil - which certainly has merit, as it immediately draws the reader's eye to that particular parcel.

It should not be necessary to restate the facts that all offset lines and traverse lines must be noted as such; that all points of the survey should be numbered; that all dimensions must show limiting arrows; that all dimensions are measured or set, and must be

designated as such and, if set, then the document used to acquire the set dimension must be shown; that all points must have a positional accuracy with respect to other points in the survey of better than 1:5,000 by tying in all survey points using a method that will guarantee accuracy; that pages must be numbered consecutively and also show: a north arrow, field staff involved, date, weather, equipment used and Project File Number.

These required items and others were discussed during the Party Chief Seminars and it is presumed they have all been put in place, however, the "why" of how things were done still remains an exasperating problem. The Field Report of Survey which should explain the reasons "why" each boundary was accepted, or re-established, or set, in the manner shown in the notes need not be extensive, but it must be explicit enough to indicate "why" it was done. The notes themselves will explain "how" it was done. Part of the "how" it was done may include calculations and, because someone other than the originator of the calculations must check all of these calculations, diagrams showing the data used and the data calculated are to be included in the field notes with point numbers shown so they can be related to the basic survey fabric.

One more item related to field notes which raises eyebrows in some quarters is the accuracy of data respecting Reference Bearing when referred to previous plans in the Land Registry System. Two found monuments from a deposited plan do not necessarily constitute a valid baseline for such astronomical bearing reference, unless they are proved to be in their original position by subsidiary measurements to other survey data and confirmed. Again, this data must be shown in the field notes. The very question respecting the accuracy of such astronomic bearings from previously recorded plans and their use needs to be seriously addressed by the AOLS.

When appraising such bearings, even if from an actual solar observation, to relate to a survey two or three miles away is a misuse of data. A quotation given *Survey Law in Canada*, Section 4.104, is entirely correct in saying,

"in Ontario usage more often than not, the wording in reference to astronomic direction is not true and the bearing reference on the plan is a charade".

The wording, as seen on some plans, "assumed astronomic" in the bearing reference is pure mockery of our technical expertise to do it correctly, and, after taking a sun observation showing all bearings to the second of arc certainly makes purists wonder if the office staff who produced the plan have understood the theory of measurement and the concept of positional accuracy.

The next point regarding the data to be shown in the field notes is that of ensuring that the area of survey is in fact tied into a corner of the lot of which the survey is a part.

Consider Regulation 898 Sec. 10(1)(b) and Sec. 5A(1)(c)(iii), Sec. 10(1)(b), under Plans - General, notes, "sufficient data to enable the location of the parcel of land surveyed to be ascertained in relation to the limits of the lot of which it is a part".

Sec. 5A(1)(c)(iii), under Descriptions of Land, notes, "where the description is of part of a lot, the description shall refer to at least one of the corners of the lot and shall give the distance from the corner to an angle of the part being described".

It would therefore be construed, from a technical viewpoint, that if our survey is for the purpose of depositing a plan on title we need not concern ourselves with Sec. 5A, but rely on the wording of Sec. 10 by showing the relationship between the survey being undertaken and a previously recorded plan. Some Registry Office staff will not accept this premise and insist the tie to a lot corner be shown (even if it is the exact data copied from the previously recorded plan and annotated as such). Their argument being that a Reference Plan is in reality just a picture of a description.

However, it must be readily admitted that if you are to show a lot corner tie then you must measure it, even if it is just to confirm that the original recorded data is correct.

This, naturally, means that if the lot corner is not actually defined on the ground by a monument then you must do the defining.

The last comment in this short article is one item that deserves much more discussion and enlightenment and must be eradicated from field notes. It is the use of Property Identification Numbers in those areas designated under Part II of the *Land Registration Reform Act*.

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The basic fact is that a P.I.N. is nothing more than an address label which is used to access particular data from the software of a highly technical computer system. It has nothing whatsoever to do with defining the actual boundaries of land. [The documents which can be accessed by the use of a P.I.N. in the computer system which convey interests in land do define ownership and attempt to set the extent of title of those interests.] P.I.N.s therefore have no use in the compilation of field notes, but the Instrument does have use and must be shown.

This is true for both the *Land Titles Act* and *Registry Act* systems of registration. The Instrument itself may be by metes and bounds, refer to Part(s) on a Reference Plan, or may refer to Parcel-Section designation, but it is still the Instrument Number which is the vehicle of conveyance.

Regulation 898 Sec. 59(c) is quite explicit in noting that Property Maps are to be prepared only for property indexing purposes and "For recorded dimensions of property boundaries see recorded plans and registered documents". Regulation 898 Sec. 10(e) requires the P.I.N.s to be shown on the Plan of Survey, and Sec. 27(1)(d) requires P.I.N.s to be shown in the Schedule of Part(s). It would appear that the Regulation seems to be over-doing things by requiring the face of the

plan of survey to indicate something that has nothing to do with the survey-related data necessary to be shown. Will the next step be that we will be required to show the Assessment Role Number which has as little to do with survey related data as the Property Identification Number?

CONCLUSION

The responsibility for the creation of field notes must not be given to someone who lacks experience in the creation of survey plans, the sense of spatial relationships, and a full understanding of what must be accomplished in the field. It is unfair to the recipient of the responsibility and often leads to incorrect data being shown on resulting plans.

The creation of good field notes takes time to learn because of the inherent need to combine many skills of a specialized nature as has been noted in the Narrative to this article. Field Notes are the most important part of the survey and upon them rests the integrity, honesty, professional and ethical considerations of the Surveyor, and, they become a monument for all time of what was done, where it was done, how it was done, and why you came to the final conclusions of where the boundaries were set. It has been said many times that the Field Survey Party Chief must never turn his or her back on a survey unless positively confident that no-one, ever, at no time, can find the work has errors in measurement or construction.

The ultimate criteria for field notes follows the same type of philosophy. When your office staff can take the notes and have nothing more to do than re-create them to a particular scale without delving into the file to search out required information - you are then at the top of your class.

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