



Boundary Survey Guidelines

What are they?

These are guidelines for the execution of boundary surveys. Boundary surveys typically involve the search for and survey of property corner monuments. They may also include the survey of physical features (like walls, fences, ridges, or creeks) along parcel boundaries (or when these features may help establish the location of parcel boundaries).

Why is it important?

Boundary field surveys are the most important step in properly resolving a parcel boundary. The licensed land surveyor needs to evaluate evidence to determine the location of each parcel boundary line. This evidence is collected during your boundary field survey. It is critical that proper survey methods are followed, that good field notes are taken, and that pictures of physical evidence are taken.

Definitions

A *property corner monument search point* is a stakeout point calculated in the office using aerial photography or information from filed survey maps. It is to be used as an approximate guide for the search for property corner monuments in the field.

A *property corner* is an angle point, curve begin point, curve end point, or witness corner point in a parcel boundary. Property corners may be, but are not always, marked by a physical *property corner monument*.

A *searched found nothing point* is the approximate location of a searched ~~search~~ for a property corner monument that revealed no physical monument.

~~Secondary control points are working points set by the field crew to survey all areas of the project site. They are not typically shown on documents provided to clients or partners outside of our company, and are for internal use. Secondary control points might be established using RTK/RTN GNSS methods or with an unadjusted/non-networked total station survey.~~

Roles and Responsibilities

The *Project Surveyor* is responsible for the following tasks related to boundary field surveys:

- 1) Supervises the creation of property corner monument search points.



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- 2) Supervises the creation of the boundary survey plan.
- 3) Determines the search priority for all search points.
- 4) Determines the method used to survey the location of found search points.
- 5) Determines the level of effort needed at each search point.

The *Survey Field Crew Party Chief* is responsible for following tasks:

- 1) To make a diligent search at each property corner monument search point, following the instructions from the Project Surveyor on search priority and level of effort.
- 2) To use the proper methods to survey found property corner monument
- 3) To take good field notes on property corner monuments found and searched for.
- 4) To communicate problems with property corner monument search points or lack of monuments to the Project Surveyor.

The *Assistant Surveyor* is responsible for assisting the project surveyor with his tasks related to the boundary field survey. This could include:

- 1) Creating property corner monument search points.
- 2) Creating the boundary survey plan exhibit.
- 3) Review field notes and raw data from the boundary field survey.
- 4) Analyzing the fit of found property corner monuments to filed survey map measurements and physical occupation.

The *Field Survey Coordinator* or *Project Surveyor* is responsible to review raw data files and ensure these guidelines are being followed by the survey field crews.

Peer Review

The *Field Survey Coordinator* or *Project Surveyor* is responsible to review raw data files and ensure these guidelines are being followed by the survey field crews.

Schedule

A plan for the boundary field survey should be created and discussed with the field crew before the field survey takes place. Information on survey methods, search priority, level of effort, and site access should be included in a boundary survey plan or other parts of the field package as appropriate.

Raw data files and field notes should be reviewed after EACH boundary field survey.



Field Notes

For every property corner monument search point, the field crew should return with a *Property Corner Monument Found* form or a *Property Corner Monument Searched Not Found* form. The boundary survey plan should be marked with points found, points not found, and points not searched for. This information can also be included on a separate *Property Corner Monument Search Results* field note sheet.

Check The Equipment:

Before starting a boundary field survey, the field crew should check their equipment. This includes the following tasks:

- Check the bubbles on your rod, instruments, and tribrachs.
- Make sure rod tips are secure and not rounded from wear.
- Make sure your data collector or survey instrument is using the appropriate combined scale factor, unit system, coordinate system/zone, and prism offset.
- Make sure you are using the fine measure mode on your total station EDM.
- Make sure you are using the appropriate epoch date interval and observation length for RTN, RTK or fast static GNSS observations.

Reminders For Boundary Surveys

Know exactly what you are looking for:

- *Know the type, description and age of each property corner monument you are searching for.*
- *Always have a copy of the filed survey map during your search.*

Always keep detailed field notes on the property corner monuments you find. These notes should include:

- Point number.
- Monument type (rebar, pipe, chiseled cross...).
- Monument stamping.
- Monument condition.
- Depth below surface or height above surface.
- Setting (monument well, center of stone pile, at fence corner...)
- Map reference (if applicable).



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Take at least three (3) photos of each monument. The first photo should be a close-up photo that shows the monument condition and stamping. (Don't take photos of a dark hole. Use a flashlight or camera flash as needed.) The second photo should show the setting and immediate vicinity of the monument. The third photo should show the overall vicinity of the monument.

If a rebar or pipe monument is bent, you can spin the monument and shoot the hole or shoot it at the point of the bend. Indicate the method you use in your field notes.

Keep brief notes on searches that don't find a monument. These notes should include:

- Search point/stakeout point number.
- Map reference (if applicable).
- Diameter of search radius.
- Depth of hole dug (if applicable).
- Any pin finder interference (chain link fence, rebar in concrete...).
- Site features that may have resulted in monument destruction (block wall, sidewalk, recent grading...).
- Obstructions to a thorough monument search. (Slash pile, parked car, landscaping...).

Keep an eye out for encroachments or evidence of use by the neighbors/public. This could result in claims of prescriptive rights or adverse possession. Take photos!

If you identify possible encroachments during your survey, ask the project surveyor if these should be surveyed.

Pay attention to building overhangs, awnings and extensions near property lines.

Never tell anyone you meet during a field survey that a monument is a property corner. That decision should only be made in the office after an evaluation of all evidence. Don't mark a lath or guard state as "PC", "Property Corner", "Corner", or "Approximate Property Corner". Use the point number and a brief description of the monument instead. For example: "#23222 Rebar and Cap".

Make a diligent search for property corners. There are important legal consequences if we show a monument as missing and it really exists. The importance of this can't be stressed enough. The Project Surveyor or Field Coordinator should prioritize the monument search. If you don't have time to thoroughly search for a monument, tell the Field Coordinator or Project Surveyor.



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A property owner may know the location of a property corner monument or may have information about its history. Don't be afraid to ask. If the landowner has information about a property corner monument, indicate this in your field notes and let the Project Surveyor know. We may want to collect sworn testimony from the landowner.

You should be provided with a boundary search exhibit. Mark the results of your property corner searches on this exhibit and return a scanned copy with your field notes at the end of the survey.

Note: During the search for a property corner monuments **open your eyes and lift your head off the data collector screen!** The monument might not be found at your search coordinate. Look for evidence like old fence corners, old flagging, rotted surveyor stakes, or piles of stones.