

DID YOU KNOW? ARTICLE

SURVEY MAP LEGIBILITY AND SCANNING

Most of us professional land surveyors take great pride in our survey maps and like to add our own touches to make them distinguishable from everyone else's survey maps. In doing this, I caution you against what is known as the "Frustrated Artist Effect". We are not creating works of art; we are creating a work of an accurate historical record of data and survey boundaries.

WAC 332-130-050 states that "for legibility purposes" the map "shall have a uniform contrast suitable for scanning or microfilming" and to not add details to your map "that to any degree diminishes the legibility of the drafting detail or text".

RCW 58.09.050 states that the records of surveys filed shall be "legibly drawn.....and is suitable for producing legible prints through scanning, microfilming, or other standard copying procedures". It further states that the auditor shall reject for recording any maps not meeting that requirement, and shall reject the original map if any prints (copies) submitted do not meet that requirement. Plus, all maps shall meet the legibility requirements as set forth in the recorder's checklist in WAC 332-130-050.

So, how can you the surveyor or the draftsperson make sure your maps meet these legibility requirements? It's easy! Take into account these factors that affect how legible an image your map produces when scanned.

- **Line work and fonts:** Very fine, light elements combined with very bold elements create uniform contrast issues. Sans serif fonts and fonts in which the strokes are uniform in width with few curves and embellishments work best. Also, be careful to not make your font spacing "narrow", as this adds even more imaging difficulties. Numbers and text should be clear, open, and readable so that 4, 6, 8, 9, 0, A, e, o, etc. do not become filled in and unrecognizable. If you choose to use a less legible font type, then you might think about increasing your text size to larger than the minimum required text size of 0.08" (which applies to lower case and upper case text).

- **Poor Quality Mylar, ink and/or plotter:** This usually shows on the map as streaks, ink that is flaking off, blank spots in the lettering or line work, and smudges.
- **Drafting the same for different mediums:** You must draft differently on Mylar vs. paper. Ink is absorbed into paper and therefore the spacing of text to line work needs to be looked at.
- **The “Frustrated Artist”:** Any flourishes or creative touches in font, lines, legend, or hatching, can create a challenge for even the most robust imaging equipment and well-trained imaging specialist.
- **Contrast Uniformity:** Keep in mind that the imaging equipment does not distinguish between important survey data information on the map and what is superfluous, such as line work and text vs. your company logo image. If the logo image is too dark or too light it may cause important survey data to fade away or be too dark to decipher. The whole idea of good contrast uniformity is to make sure the lightest element and the darkest element on your map (anywhere on the map!) are not too far apart on the spectrum of light & dark.

Remember, the digital image becomes the map of record....not the hard copy. The scanned image is transferred onto microfilm and sent to State (or County) Archives. The image on microfilm is the official final product of your map. You might not have control over the scanning equipment used, the proficiency of the scanning technician, the willingness of the organization to make legibility of scanned maps a priority; BUT you can control the “scanability” of the map by, following the rules and laws about legibility, being willing to make necessary drafting changes to help produce legible images, and performing Quality Control checks by looking at your map’s digital image.

The goal is that your professional work of record is intelligible and graphically unambiguous – even when examined by someone unfamiliar with surveying and/or someone years from now, using whatever media is in existence in the future.

This article is presented by the WA DNR Survey Advisory Board. (12/4/2018)

<https://www.dnr.wa.gov/about/boards-and-councils/survey-advisory-board>