

4.7 Site Data & Survey Requirements for Bridges & Major Culverts

Ensure that a detailed site survey (see [Appendix E Bridge and Major Culvert Site Plan Specifications of the Forest Service Bridge Design and Construction Manual](#)) carried out for a bridge or major culvert project. Use the survey information to produce site plan and profile drawings for planning, evaluating, and developing the crossing design. Determine the type and extent of site survey to be completed, including the quality of site information to be collected.

Typically, collect and note on a site plan the following information:

- contours to 0.5 m interval accuracy (may vary depending on complexity of the site);
- the riparian class for streams or lake classification;
- the apparent high-water elevation of the stream, based on visible evidence of recent flooding;
- a description of the composition and size of stream bed materials;
- a description of streambank materials and stream stability;
- cross-sections and a profile of the stream: one cross-section should be along the proposed road centreline and extend beyond the stream channel width, normally to at least 50 m on each side;
- horizontal and vertical location of reference points established during the site survey, which can be used to establish (and re-establish) the structure location during construction;
- the stream flow velocity and direction, if the flow may influence the size or layout of the structure;
- a description of the soil profiles and foundation soil conditions, based on soil explorations appropriate to the level of risk;
- presence (or absence) of bedrock, and depth to bedrock;
- a description of any evidence of stream debris or slope instability that could affect the crossing, based on upstream observations;
- any existing improvements or resource values in the vicinity that may influence the size or layout of the structure;
- location and dimensions of any existing structure, including edge of roadway, abutment, superstructure, stream, edge of clearing information, profile of existing road to the limits of the survey, and location, general description, and extent of vegetation;
- the locations and dimensions of any upstream structures, and a note about whether there is any evidence of damage or disturbance from any sources (erosion, debris damage, etc.);
- potential sources of rip rap, endfill material;
- any other pertinent information: Is the site currently accessible by road? Are there road or bridge restrictions on load length or weight? If so, how can these be overcome? If test drilling seems likely, how much work is required to get a drilling truck (usually not all-wheel drive) to the site?
- if equipment fording or temporary bridge crossings will be necessary for construction, information

about possible ford and temporary bridge crossing locations and other considerations such as depth of stream at that point, bottom material, and access gradients; and

- the date of the survey and name of the surveyor.

If a fish stream is involved, consult [chapter 3 of the Fish-stream Crossing Guidebook \(PDF, 4.3MB\)](#) for additional site information requirements.