



## PRIVATE BRIDGE PERMIT REVIEW CHECKLIST

Applicable only to private bridges not reviewed by the county engineer under Title 21

A building permit is required to construct a vehicular access bridge on private property. A WA State licensed architect or engineer is required and shall be designated on the cover sheet of the permit documents. Acting as the registered design professional in responsible charge for the project, this individual shall be responsible for reviewing and coordinating all submittal documents including those prepared by others, for compatibility with the design of the bridge structure (IBC Section 106.3.4).

The following information is required to obtain the permit. All requested submittals must include (2) copies and must be stamped/signed by the registered design professional who prepared the documents.

### Prior to time of permit application submittal:

A pre-application screening is required for commercial use bridges and recommended for residential use bridges prior to building permit submittal. Contact the Building Services division to schedule a screening appointment and/or for submittal requirements.

### Required at time of permit application submittal:

**Construction Plans:** All drawings must be to scale. Preferred minimum drawing scales are as noted. Minimum paper size is 18" x 24". All sheets should be dated and numbered (sheet x of y). A north arrow should be shown on each plan view sheet and adjacent to any other drawing which is not oriented the same as other drawings on the sheet. The following drawings are required:

- Location Map
- Site Plans (2) One plan should show the entire site, project location and all existing site improvements including utilities.  
Second plan should show the specific area of work and adjacent area within 100', topography (2' interval contour lines), all proposed improvements including grading, (existing and finish grade lines/elevations), utilities, etc - scale: 1" = 20'-0".
- Topographical Plan (if not incorporated into Site Plan)
- Grading Plan (if not incorporated into Site Plan)
- Bridge Plan - 1/4" = 1'-0"
- Elevations - 1/4" = 1'-0"
- Cross Sections - 1/2" = 1'-0"
- Details - 3/4" = 1'-0"
- Structural Plans (similar drawing scales)
- Specifications

**Hydraulic Report** prepared by a professional engineer with expertise in hydraulics and scour analysis. At a minimum, the report should include the following items:

- Basin hydrology evaluation, including the expected range of flows in the waterway.
- Channel hydraulics evaluation, including 100-year flood elevation relative to the bridge roadway elevation and the corresponding maximum expected water velocity.

**(Hydraulic Report – continued)**

- \_\_\_ Scour hydraulics evaluation, including scour depth calculation, bridge foundation review and design of mitigation measures as necessary.
- \_\_\_ If situated in a floodplain, verification that a no-rise condition exists.

A full hydraulic report may not be required for smaller scale projects. For bridge projects that cross streams with mean annual flows less than 40cfs, a risk analysis performed by a professional engineer may be acceptable. This analysis should state the basis for the engineer's opinion that a full hydraulic report is not necessary. It should address scour, debris passage, bed aggradation and a safety margin. Subject to approval of the risk analysis report by Whatcom County, the hydraulic report requirement will be waived.

**Geotechnical Report** prepared by a professional engineer with expertise in soils and foundation design. At a minimum, the report should include but not necessarily be limited to the following items:

- \_\_\_ Soil analysis bore hole at each bridge support including all piers and bridge abutments.
- \_\_\_ Analysis of soil and soil bearing properties.
- \_\_\_ Foundation type recommendation.

**Structural and General Design** prepared by a professional engineer with expertise in bridge design including structural calculations and drawings. At a minimum, the structural analysis should include the following items:

- \_\_\_ Designed in accordance with the current adopted edition of the following Codes:
  - *AASHTO Standard Specification for Highway Bridges, HB-17 and including HS20-44.*
  - *Whatcom County Development Standards: Chapter 5 - Road Standards, Section 513 - Bridges and Associated Retaining Walls.*
  - *International Building Code (IBC) Chapter 16 where not addressed by AASHTO.*
- \_\_\_ Structural documents to include all relevant calculations and analysis required by current adopted edition of AASHTO standards.
- \_\_\_ Specifications for all necessary materials.
- \_\_\_ Analysis for all design loads including seismic, wind, snow, flood and future paving overlays.
- \_\_\_ Statement confirming that findings from the Hydraulic Report and Geotechnical Report have been reviewed and are incorporated within the design proposal.
- \_\_\_ Live load design shall be sufficient to carry the imposed loads of emergency apparatus per the current adopted edition of the International Fire Code (IFC) – Chapter 5.
- \_\_\_ A final load rating should be prepared based on the “as-built” record drawing and sent to the Whatcom County Fire Marshal and Building Official.
- \_\_\_ General design per the above listed standards including curb, guardrail, width, height, clearance, etc.

**Environmental Reviews and Permits** to insure compliance with applicable federal, state and local environmental regulations including the following as applicable:

- \_\_\_ U.S. Army Corps of Engineers (USACE)
- \_\_\_ Critical Area Variance and/or Reasonable Use
- \_\_\_ Endangered Species Act checklist
- \_\_\_ Flood Review
- \_\_\_ Shoreline Exemption
- \_\_\_ Shoreline Substantial Permit
- \_\_\_ WA State Department of Ecology (DOE)
- \_\_\_ Whatcom County Land Disturbance permit
- \_\_\_ Others as required.

□ **Required as Conditions of Approval:**

**Construction Observation** to ensure that the construction documents are adhered to. During construction the engineer of record or a qualified special inspector will be required to perform the following work:

- \_\_\_ Construction observations to ensure that the construction documents are adhered to.
- \_\_\_ Deficiencies shall be reported in writing to the owner and the Building Official.
- \_\_\_ Submit an “as-built” record drawing prepared and stamped by registered design professional identifying all changes from the approved permit documents.
- \_\_\_ Submit a final report and Certificate of Compliance per IBC Section 1702, certifying that site visits have been made and the bridge was completed in accordance with with the construction documents substantially similar to the following sample:

“I hereby affirm that all infrastructure improvements shown on these ‘as-built’ drawings and specifications have been constructed in substantial compliance with the plans and specification approved by Whatcom County. I affirm that the plans accurately depict the horizontal and vertical location of and the type, size and class of all roadways, roadside structures, drainage element, grading features and other roadway and site facilities constructed pursuant to the approved plans. I further affirm that all specified inspections and testing have been completed and that all Transportation, Environmental, Mechanical and Structural elements shown on the approved plans function as designed.”

Statement should include engineer's name, registration number, expiration date and seal.

**Special Inspections** on the types of work listed under IBC Section 1704. The engineer of record or qualified special inspector will be required to perform the following work per IBC Section 106:

- \_\_\_ Prior to start of construction the registered design professional in charge shall provide a Statement of Special Inspections per IBC Sections 1704 and 1705.
- \_\_\_ During construction perform all required special inspections.
- \_\_\_ Furnish inspection reports to the building official and registered design professional in charge indicating that work inspected was done in conformance to the approved documents. Any discrepancies shall be reported for correction.
- \_\_\_ Submit a final report and Certificate of Compliance documenting corrections of any discrepancies.

□ **Required prior to final inspection:**

**Future Inspection and Maintenance:** The structural engineer of record shall specify the inspection and maintenance frequencies and procedures for the bridge and all its components. The owner of the bridge shall have the responsibility of maintaining the bridge in a safe condition, taking into account all of the engineer’s recommendations. The owner shall also have the responsibility for compliance with any inspection, testing, frequency interval and/or reporting criteria listed within, or as a condition of, any County permit or project approval by the County. Refer to WCDS Chapter 5 - Road Standards: Section 513 for additional information.