



Illinois Department of Transportation

2300 South Dirksen Parkway / Springfield, Illinois / 62764

February 19, 1999

Preliminary Bridge Design and Hydraulic Report Form (BLR 5901)

County Engineers/Superintendent of Highways
Municipal Engineers/Director of Public Works
Consulting Engineers

#99-4

Attached is a copy of the updated [Preliminary Bridge Design and Hydraulic Report form \(BLR 5901\)](#). Also attached is a copy of general instructions for completing form BLR 5901. The applicable portions of form BLR 5901 should be completed and submitted for all local agency bridge and culvert projects that must be reviewed and approved by the Illinois Department of Transportation prior to construction. For most rural stream crossing projects, the completed BLR 5901 form should provide sufficient information for IDOT personnel to review and approve proposed projects. However, for projects over waterways with main span lengths of 100 feet or greater and for bridges over roadways or railroads, plan sheets containing type, size and location information should be submitted with the completed BLR 5901 form.

The updated BLR 5901 form should be used for all projects which have not yet been submitted to the Department for review. Projects which have already been submitted to the Department will be processed using the previous BLR 5901 form. If you have any questions in regard to the use or completion of the updated BLR 5901 form, please contact John Morris at 217/782-5928 or Tom Cartmel at 217/782-5929.

Very truly yours,

A handwritten signature in cursive script that reads "Ralph E. Anderson".

Ralph E. Anderson
Engineer of Bridges and Structures

JAM/bb16335

Instructions for Completing
The
PRELIMINARY BRIDGE DESIGN AND HYDRAULIC REPORT

The Preliminary Bridge Design and Hydraulic Report (Form BLR 5901) consists of two sheets. The sheets contain the necessary information for use by Department personnel in reviewing the preliminary bridge design and processing the hydraulic reports for local agency bridge and culvert construction projects.

The Form BLR 5901 should be submitted for all local agency bridge and culvert projects that must be approved by the Department prior to construction. In addition to the Form BLR 5901, a plan sheet containing type, size and location information should be provided for bridges over waterways when the length of the main span is 100 feet or greater and for bridges over roadways or railroads.

Prior to submitting Form BLR 5901 for a bridge replacement project using federal funds or any bridge rehabilitation project, a Bridge Condition Report (BCR) should be submitted for review and approval. Also, a copy of the "Master Structure Report" for the existing bridge should be obtained from the District Bureau of Local Roads and Streets to assist the designer during the preparation of the BCR and the completion of the Form BLR 5901. For further clarification in regard to completing specific portions of the form, the following comments are provided:

Funding

Information for sufficiency rating, functional obsolescence, structural deficiency and clear span length should be as shown on the "Master Structure Report" for bridge replacement or rehabilitation projects.

Construction

The information provided in this portion of the form is intended to assist Department personnel in prioritizing projects for review and identifying projects that will require review and inspection of fabrication related operations during construction.

Approach Roadway

Traffic data and functional classification for the roadway should be as shown on the "Master Structure Report" for bridge replacement or rehabilitation projects. Information on the use of 3R Design Guidelines is intended to inform personnel reviewing the project that the structure is located within the limits of a 3R roadway project or that the use of 3R Design Guidelines has been approved for use on a bridge project.

Proposed Structure

Borings must be submitted with the Form BLR 5901 for all "Standard Plan" bridge projects and for all projects requiring the submittal of plan sheets showing type, size and location information. We recommend that boring data be submitted with the Form BLR 5901 for all projects. However, preliminary bridge designs for projects for which the final design plans will be accepted base on the

structural seal, certification and signature of a licensed structural engineer (see Circular Letter #92-2) may be approved prior to submittal of the borings when necessary to expedite the development of the project.

Hydraulic Data

The hydraulic data portion of the form is intended to provide a summary of the results of the hydraulic analysis in regard to freeboard, created heads and construction permit requirements. The locations of designated "Public Bodies of Water" are provided in Statewide Permit No. 12 as modified or corrected June 15, 1998. The over-the-road flow information provided in this portion of the form is intended to assist review personnel in determining if the provision of Statewide Permit No. 12 are applicable to the project.

Site Information

When completing the site information portion of the form for projects that will be accepted under the provisions of Statewide Permits No. 2 or No. 12, particular attention should be given to adequately providing information in regard to over-the-road flow and demonstrable flood damage associated with existing structures.

Scour Analysis

A scour analysis must be performed for all new, replacement and rehabilitation bridge projects to determine the potential depth of scour and to evaluate the effect of the potential scour on the substructure. This portion of the form is intended to document that the scour analysis has been performed and the actions taken as a result of the analysis.

Attachments

The items specifically listed as attachments must be submitted with Form BLR 5901 when applicable to the project. The Joint Application Form NCR-426 must be provided for all projects that will be forwarded to the Office of Water Resources of the Illinois Department of Natural Resources to obtain an individual construction permit.