Bridge Builders

36 Westgate Plaza, Franklin, NC 28734 | (800) 874-9403 | (828) 369-5735
www.bridgebuilders.com

GETTING STARTED

When you're ready to add a timber vehicular bridge to your commercial and residential developments, parks, property, or golf course, you'll usually need to get permission from at least one governmental authority. For example, you may need permission for changing an existing grade, moving earth for a foundation, locating a bridge within a flood plain, and closing any stream or body of water.

The agencies that grant permits include Water Control Districts, Departments of Natural Resources, Departments of Environmental Regulation, and other similar regulatory agencies. If needed, we can provide preliminary drawings for review by the appropriate authorities.

Bridge Builders ™ can design a timber bridge to meet your local codes and regulations. We are very familiar with design restrictions and requirements nationwide. Bridge Builders ™ has placed timber vehicular bridges and boardwalks coast to coast throughout the United States and Guam.

DETERMINING YOUR BRIDGE LOCATION

You will need to consider many factors as you decide where to build your timber vehicular bridge. First, you'll need to consider the high water elevation at your proposed timber bridge site. Usually you will want to locate the timber bridge so that there is a clearance or free board between the bottom of the timber bridge and the high water elevation or 100-year flood level. These criteria may determine the length of the timber bridge in some locations.

The grades of the approaches and banks of the stream or pond also can affect timber bridge length. You'll want to have a relatively flat approach to the bridge if this can be accomplished without major grading.

The best tool in determining your bridge size is a tape measure. Measure your proposed location keeping these points in mind and try to minimize the span.

BRIDGE DESIGN CRITERIA

The most common design codes and specifications used for timber vehicular bridge design are:

- "Standard Specifications for Highway Bridges," adopted by the American Association of State Highway and Transportation Officials (AASHTO). This is a set of design criteria developed for highway bridges. It is intended to govern the design of bridges subject to many repetitions of vehicle loads and to heavy vehicle loads. This code requires a uniform live load of 85 psf.

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Following is some of the information you will need to accumulate as you consider a timber bridge. Bridge Builders' ™ representatives are standing by ready to help you with each step of the process and discuss how they apply to the needs of your specific timber vehicular bridge.

1. **WHAT IS YOUR CONSTRUCTION TIMEFRAME?**
    - Are your timber bridges part of a larger construction project?
    - When do you hope to begin construction?
    - Have you begun the budgeting process?
2. **WHAT IS GOING TO BE THE USAGE OF YOUR TIMBER VEHICULAR BRIDGE?**
    - What is the weight capacity requirement?
    - How long will it be?
    - Will you need to meet AASHTO highway requirements?
    - How many lanes of traffic will the timber bridge need to accommodate?
    - Will it support utilities?
    - What are the pedestrian needs?
3. **SITE CONSIDERATIONS.** When you are deciding on the exact location and layout for your timber vehicular bridge, some specifics that you will need to take into account are:
    - The terrain
    - The environment
    - Site access (to both sides if you are choosing a free-span structure)
    - Is there a better location? (shorter distance, better ground conditions, etc)
4. **POTENTIAL PERMITTING AND ENVIRONMENTAL ISSUES.** These issues are quite important and can greatly impact your project plan. You may need to find out the following before building a bridge:
    - Are there environmental restrictions?
    - Are there certain materials that will be prohibited in the crossing area?
    - How wide is the wetland area? Is there a buffer zone extending past this?
    - Are piling permitted throughout the length of the crossing? If not, at what points are they prohibited?
    - Are there limitations on the construction methods?

    Contact your local permitting authority for assistance in answering these important questions.

5. **WHAT IS THE TERRAIN YOUR TIMBER VEHICULAR BRIDGE WILL SPAN?**
    - Will your timber vehicular bridge cross water, wetlands, ravine, etc.?
    - Is water present?
    - How deep will the water be during construction?
    - How deep can the water get (i.e. 100 year flood line)?
    - Is the water salt, fresh, brackish? The water salinity can impact the treatment required on the piling and the hardware used on your project.

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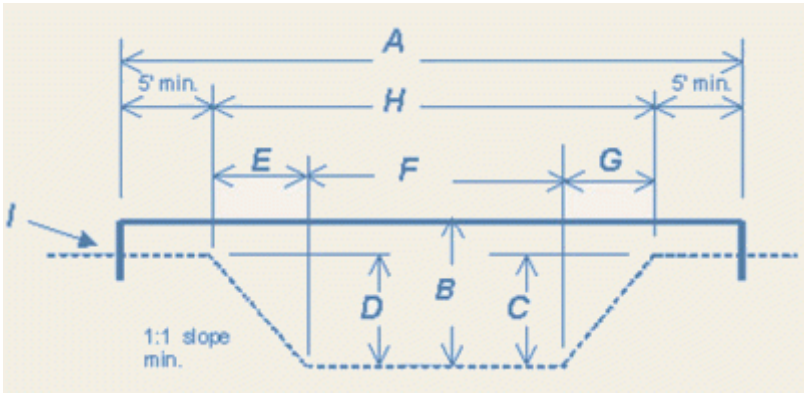
- Is the flow of the water fast, stagnant or slow?
- Are any soil reports available?

6. **BRIDGE BUILDERS WILL USE THE INFORMATION BELOW AS A GUIDELINE FOR BUDGETARY PRICING.**
   A. Total bridge length:
   B. Maximum bridge deck height:
   C. Height of embankment:
   D. Height of embankment:
   E. Length of embankment:
   F. Creek/ravine/crossing width at bottom:
   G. Length of embankment:
   H. Top of bank to top of bank:
   I. Top of bank to top of bridge:



7. **Height** – This is the distance from the deepest location of the pond, ravine, creek, etc. to the top of the deck of the timber bridge. You can figure out the height by knowing:
   - The depth of the crossing in its deepest location. If the depth varies greatly from one side of the timber bridge to the other, a profile (side view) drawing will help you accurately understand your project.
   - Consider potential flood lines to determine the height of the deck from the top of the water.
   - When a free-span glulam structure is built, consider the depth of the glulam. This could be considerable depending on the total length of your timber vehicular bridge; contact your Bridge Builders' ™ representative for details.

   Length – The drawing represents the fact that you will typically measure at least 5 feet, and perhaps 10 feet or more, past the top of the bank on each side of your crossing. Keep in mind when determining this figure any environmental constraints and set backs that may require more than 5 – 10 feet from the top of the bank.

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Choose Bridge Builders as your contractor when you're deciding how to build a bridge and see why we have been the undisputed leader in timber vehicular bridge construction for almost 30 years.