Bridge Jumping 101

Why Does it Matter?

As new power plants get larger, major components will naturally get larger and heavier. The infrastructure of the United States was not originally built to handle "super-loads," extremely large loads whose definition varies from state to state; now a typical super-load move may require multiple full bridge studies. Another major factor is the typical location of these plants - most are in very remote parts of the US, where roads and bridges have not seen a drastic amount of capital investment for rehabilitation or maintenance. Most bridges are capable of handling vehicles beyond the legal weight limit; refined analysis from third-party engineers, such as IIS, can provide analysis to local DOT officials that a bridge is capable of supporting a super-load.

Key Takeaways:

- Plan early to avoid schedule delays
- Engineering analytical work can lead to quickest, most economical solution
- Bridge jumpers could be a secondary option
- Strengthening bridge is last resort
  - Highest cost
  - Longest timeline

$$\textit{Rating Factor} = \frac{\textit{Capacity} - (\textit{Load Factor} \times \textit{Deadload})}{\textit{Load Factor} \times (\textit{Live Load} + \textit{Dynamic Load})}$$

- Maximum weight capacity - approximately 500Tons
- Maximum length of jumper - approximately 90 Feet
- Bridge angle height - approximately 4-8 Feet
- May jump entire bridge or possibly just the problematic portion of a bridge
- Bridge and road surface are key variables to what type of bridge jumper is to be used
- Most jump bridges need to be installed with cranes
- Preferred solution is to limit speed to 5 mph and not shift gears: ~30%reduction in load.
- Cost varies drastically depending on size and bridge location

Contact us today to learn more about the cost and feasibility utilizing bridge jumpers.

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Progressive Steps:

When analytical solution has been ruled out

STEP 1
Initial Meeting

- Initial meeting with DOT
- Investigate what other government agencies need to be involved
- Determine hat permits will be required
- No set standard practice, case by case basis.
- Third-party engineering resource highlighted

STEP 2
Permitting

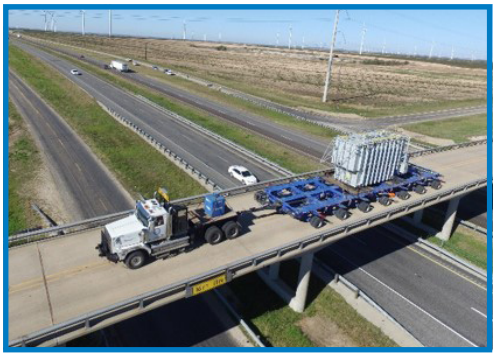
- Determine what type of bridge jumping equipment is required
- Technical drawings and information provided for DOT review
- Permits issued for bridge and roadway

STEP 3
Execution

- Field inspection and review
- DOT engineer has to approve jumper or bridge-strengthening construction when in place or completed
- Third-party vendor will inspect before and after travel

OPTION 1
REFINED ANALYSIS

(More accurate measurement than Single Line Girder analysis, may include load test of bridge)



OPTION 2

Jump Bridge
(Temporary)

OPTION 3

Temporary shoring to full reinforcement
(Last Resort)