



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY  
GOVERNOR

LYNDO TIPPETT  
SECRETARY

September 24, 2007

MEMORANDUM TO: Division Engineers

FROM: W. S. Varnedoe, P. E.  
Chief Engineer-Operations

SUBJECT: Loads on Bridges During  
Construction and Maintenance Activities

Article 420-20 of the Standard Specifications requires submittals for review and acceptance prior to placing construction loads on any part of a bridge. Examples of construction loads that fall under this requirement are material and debris storage and placement of heavy equipment not legally allowed on a roadway. Heavy equipment includes, but is not limited to, crawler cranes, truck cranes and concrete pumping trucks operated with outriggers down, scrapers, off-road dump trucks, proof rollers, automatically controlled fine grading machines, and concrete paving machines.

In administering this requirement, the following review authority applies:

1. The Structure Design Unit will review plans for bridges that have been or are being constructed under an active contract.
2. The Bridge Maintenance Unit will review plans for placing loads on existing bridges. The Division Bridge Maintenance Engineer will submit plans for maintenance activities including but not limited to repairs, partial removal of decks, and rehabilitation to the Bridge Maintenance Unit for coordination and review.
3. The Designer of Record will review and accept plans for detour bridges on construction projects that have been designed by the Contractor or consultant working for the Contractor. In this case, the Contractor must provide a letter to the Resident Engineer from the Designer of Record indicating that the proposed plan is acceptable. Details of the proposed operation must be submitted and sealed by the Design Engineer of Record.

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TRANSPORTATION BUILDING  
1 SOUTH WILMINGTON STREET  
RALEIGH NC

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4. The Resident Engineer or Division Bridge Maintenance Engineer as appropriate will review all proposals to cross bridges with construction equipment that can legally cross a bridge but may cause damage to the bridge deck and joints. This includes, but is not limited to, asphalt paving machines and steel wheel rollers.

In order to expedite the review, the following information should be obtained and submitted with the request:

- Location, dimensions, and weight of stored materials or debris
- Make and model of the equipment including the manufacturer's catalog cuts
- General dimensions of the equipment, including width and length of tracks and spacing center to center of tracks or number and spacing of axles
- Type of work being performed and weight of load to be lifted or carried by the equipment while on the bridge
- Size of construction mats to be used under the tracks or outriggers
- Spans that the equipment will be traveling on exact locations on the spans
- Any other equipment, vehicles, or materials that will be on the span at the same time
- Proposed method for protecting joints or joint blockouts

Under no circumstances should construction loads be allowed on a bridge deck without prior approval. Upon completion of the work or crossing, the deck should be inspected and any damage reported to the reviewing authority for further investigation.

If you need additional information, please contact State Construction Engineer Ellis Powell at (919) 733-2210.

WSV/msr

cc: Bill Rosser, P.E., State Highway Administrator  
Jon Nance, P.E., Director of Field Operations  
Lacy Love, P.E., Director of Asset Management  
Debbie Barbour, P.E., Director of Preconstruction  
Victor Barbour, P.E., State Project Services Engineer  
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Division Maintenance Engineers  
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Resident Engineers  
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