



To: SUPERSEDED BY EB 21-057 EFFECTIVE 11/24/21		New York State Department of Transportation ENGINEERING INSTRUCTION	EI 00-009
TITLE: TEMPORARY HIGHWAY STRUCTURE DESIGN LOADS			
Distribution: <input type="checkbox"/> Manufacturers (18) <input type="checkbox"/> Surveyors (33) <input checked="" type="checkbox"/> Main Office (30) <input checked="" type="checkbox"/> Consultants (34) <input checked="" type="checkbox"/> Local Govt. (31) <input checked="" type="checkbox"/> Contractors (39) <input checked="" type="checkbox"/> Regions/Agencies(32) <input type="checkbox"/> _____ ()	Approved:  J. M. O'CONNELL Deputy Chief Engineer (Structures) 4-28-00 Date 		

EFFECTIVE DATE:

This EI is effective with the letting of September 7, 2000.

PURPOSE:

At present the design live load for temporary highway structures is given in the Standard Specifications as M 14-44, unless otherwise shown on the plans. This EI will change the standard design live load for temporary highway structures to MS 18, unless otherwise shown. This EI also contains guidance for designers in designating alternate live loads for temporary structures. A note is now required to be placed on the plans designating design live load for all temporary structures.

BACKGROUND:

Temporary structures are frequently used on Department projects for maintenance and protection of traffic. Section 619-3.04 of the Standard Specifications has long given the design live load for such structures as M 14 (H15). In many cases this design live load has been increased by a note on the plans. While at one time an M 14 live load may have been adequate, it is not sufficient in most situations today. Increased heavy truck traffic and permit vehicles require a design live load consistent with the operational characteristics of the bridge and adjoining roadway. For this reason, it is considered appropriate to raise the normal design live load for temporary structures. The MS 18 (HS 20) loading approximates current legal loads and is significantly closer to the present design live load requirement of MS 23 (HS 25) for permanent structures.

ALTERNATIVE LIVE LOADS:

While the new standard design live load (MS 18), is sufficient for all current legal loads, it is recognized that in a few situations, the design live load for temporary structures should be increased to the full MS 23 design live load now used for permanent structures. This should be considered for the following types of projects:

- Interstate or equivalent highways with very high Average Daily Truck Traffic (ADTT). Very high ADTT can generally be taken to be over 10,000.

- Interstate or equivalent highways where it is anticipated that the temporary structures will be in service longer than one year.
- Other locations that may have unique situations in regard to very heavy industrial truck traffic, anticipated very heavy permit vehicles or access to railroad yards and port facilities.

It is also recognized that some locations may not require a MS 18 design live load for temporary structures. This would most often be the case for structures on parkways or in rural areas. However, locations in rural areas should be treated with caution since many low volume roads frequently carry heavy vehicles such as logging trucks, milk tankers and heavy farm machinery. Structures on parkways that will be in use over a winter season should also be treated with caution because snow removal equipment may approximate MS 18 loading.

All uses of temporary structures with design live load less than MS 18 need to receive approval from the Regional Structures Engineer. In certain circumstances, temporary structures designed for a live load less than MS 18, will require posting. In no case will approval be granted for a design live load less than M 14. In no case shall a temporary bridge on an NHS designated route be designed for less than MS 18.

COST IMPACT:

It is estimated that a temporary structure designed for MS 18 will be approximately 10 -15% more expensive than an M14 design. Because there have been relatively few temporary structures actually designed for a live load less than MS18, this EI is expected to have a relatively minor effect on overall program costs. In 1999, only two temporary structures could be identified that used a design live load of less than MS 18. It is estimated that the total cost of upgrading these two structures to a MS 18 design would have been approximately \$30,000.

ACTION BY DESIGNERS:

Place the following note on the plans (General Highway Plan sheet and General Structure Plan sheet showing the temporary structure) for all projects containing temporary structures:

"The temporary structure shall be designed in accordance with the current AASHTO Standard Specifications for Highway Bridges for a design live load of _____."

ACTION BY MAIN OFFICE DQAB:

The attached note for Section 619 of the Standard Specifications shall become a Main Office insert starting with the first letting of September 2000. The changes will be incorporated in the next revision to the Standard Specifications.

CONTACT:

Questions regarding the EI should be directed to Arthur Yannotti of the Structures Division Standards Unit at (518) 485-1148.

Make the following changes to the Standard Specifications of January 2, 1995:

Page 6-91, under **619-3.04 TEMPORARY STRUCTURES AND APPROACHES** on line 44:

Delete "M 14 - 44" and replace with "MS 18".