VIRGINIA DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

INSTRUCTIONAL AND INFORMATIONAL MEMORANDUM

<table>
<tr><td>GENERAL SUBJECT:

VDOT Modifications to the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals.</td><td>NUMBER:
IIM-S&B-89
IIM-LD - 250
TE – 375.0</td></tr>
<tr><td rowspan="2">SPECIFIC SUBJECT:

Maximum Span Length Limits for Ancillary Structures and Bridge Parapet Mounts.</td><td>Date: October 11, 2013</td></tr>
<tr><td>SUPERSEDES:
IIM-S&B-74
TE-347.0</td></tr>
<tr><td colspan="2">DIVISION ADMINISTRATOR APPROVAL:

/original signed/
Raymond J. Khoury, P.E.
State Traffic Engineer
Approved: October 17, 2013

/original signed/
Barton A. Thrasher, P.E.
State Location and Design Engineer
Approved: October 11, 2013

/original signed/
Kendal R. Walus, P.E.
State Structure and Bridge Engineer
Approved: October 18, 2013</td></tr>
</table>

Changes are shaded.

EFFECTIVE DATE:

The following requirements for maximum span limits are effective for all projects with an advertisement on or after **June 1, 2014**. The moratorium on new bridge parapet mount sign structures remains in effect on all projects.

BACKGROUND:

In 2012 as a result of the Quality Assurance and Condition Assessment of Cantilever Sign Structures, the Department reviewed the design requirements used for construction of Ancillary (or Sign) Structures. It was determined that the Department should establish reasonable span limits for ancillary structures in lieu of the minimal guidance currently provided to traffic designers on this issue. The following span length limits are established for use in plan development for traffic structures.

SPAN LENGTH LIMITS FOR ANCILLARY STRUCTURES:

The following span limits shall apply to structures:

Maximum Span Length		
Structure Type	**Span Length*, ft.**	**Supplemental Requirements**
Overhead Sign Structure	150	Structure shall not have a center support.
Overhead Sign Cantilever	50	VMS or CMS signs shall not be erected on cantilever structures. **
Signal Mast Arm	78	
Overhead Signal Structure	190	Signal structure shall have a single chord or twin chord only.
Signal Twin Mast Arms	70 single arm	Maximum combined length for both arms is 130 feet.
Span Wire Signal	225	

* Span length is defined as center-to-center of column for span structure and face-of-column to tip of arm for cantilever and signal structures.

** This IIM supersedes Structure and Bridge IIM-S&B-74 and reiterates that there is a moratorium on erecting any cantilever sign structures with variable message sign(s) (VMS) or changeable message sign(s) (CMS). The original decision was based on a failure that occurred near the I-81 weigh station near Troutville. These cantilever structures were subject to other wind phenomena which were not adequately addressed by the AASHTO *Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals* at that time. Although now addressed in the current specifications, it is felt that a span type structure or butterfly is more suitable for the design if VMS/CMS is/are included.

BRIDGE PARAPET MOUNTS:

Based on the Chief Engineer and Chief of Systems Operations joint memorandum issued on July 24, 2008, the moratorium on new bridge parapet mount structures remains in effect and new bridge parapet structures shall not be allowed. The Department has undertaken a program to remove these structures from bridges because of the use of adhesive anchors and inability to adequately inspect these structures. Design Waivers for new bridge parapet mounted structures will not be approved.

DESIGN WAIVERS:

Deviation from these span limits and supplemental requirements shall require a design waiver and shall be requested in writing to the Assistant State Traffic Engineer for Traffic Control Devices for approval by the Assistant State Structure and Bridge Engineer in charge of Engineering Services. Form LD-448 shall be utilized following the procedures outlined in IIM-LD-227. The request should include the following information: (see sample completed form in Appendix A)

- Maximum length from table above and proposed length.
- Reason(s) why the maximum length criteria cannot be met.
- Justification for waiver.
- Any background information which documents or justifies the request including why an alternative structure is not feasible. Examples include the following: location/site view and/or an aerial photo with proposed placement of ancillary structure, proposed sign message, location(s) of proposed signal and other traffic control devices, etc.
- Any mitigation to further support or justify the waiver request.

CC: Chief Engineer
Deputy Chief Engineer
State Location and Design Engineer
State Structure and Bridge Engineer
State Traffic Engineer
State Operations Engineer
Assistant State Structure and Bridge Engineers
Assistant State Traffic Engineer – Traffic Control Devices
District Structure and Bridge Engineers
State Traffic Design Program Manager
Regional Operations Directors
Regional Operations Maintenance Managers
Regional Traffic Engineers
FHWA – Bridge Section

Appendix A

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(10-9-13)

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DEPARTMENT OF TRANSPORTATION
LOCATION AND DESIGN/STRUCTURE & BRIDGE
DESIGN WAIVER REQUEST

(See IIM-LD-227 for the definition of Design Waiver)

To: _____ Date: _____
Assist. State Structure and Bridge Engineer

From: _____
Project Designer (L&D or S&B)

Com-plete this part

State Project Number: _____ Federal Project Number: _____

County/City: _____ District: _____ Funding Source: _____

Project Description
From: _____ UPC: _____
To: _____

Functional Classification: N/A Minimum VDOT GS Standard: N/A

Min. VDOT Standard: (Value from Table) Min. AASHTO Standard: N/A

A Design Waiver is requested for the following:

- ☐ Clear Zone
- ☐ Total Shoulder Width
- ☐ Paved Shoulders Width
- ☐ Curb and Gutter
- ☐ Minimum Radius
- ☐ Pedestrian Accessibility Compliance (See IIM-LD-55)
- ☐ Intersection Sight Distance
- ☐ Ditch Width
- ☐ Lane Tapers
- ☐ Buffer Strip Width
- ☐ Superelevation
- ☒ Other (Check Here)

Design Waiver request must address the following:

- Established design criteria versus proposed and existing criteria (including traffic data, design speed and posted speed)
- Reason the appropriate design criteria cannot be met
- Justification for the proposed criteria
- Any background information which documents, supports or justifies the request
- Any mitigation that will be provided to further support or justify the request
- Safety implications of the request
- Cost to meet standard versus project cost

Attach all supporting documentation to this exhibit including crash history (past three years).

Provide this information plus additional information as requested in I&IM. Crash history is not required.

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* To be completed by C.O. Traffic Engineering Division

Recommend for Approval by: _____ Date: _____
Assist. State Traffic Engineer-Traffic Control Dev

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* To be completed by C.O Structure and Bridge Division

Drop List by: _____ Date: _____
Assist. State Structure and Bridge Engineer

CC: Appropriate Assistant State Location and Design Engineer
Project Manager
State Geometric Engineer
State Structure and Bridge Engineer
Assistant State Traffic Engineer – Traffic Control Devices
Assistant District Structure and Bridge Engineer