

# Development and Evaluation of a Non-Proprietary Sign Support System for MASH TL-3 (T4541-EC)

- Status: Completed
- Research Need
  - Sign support system meeting MASH TL-3
  - Consider range of system configurations
- Objectives
  - Evaluate sign support system according to MASH TL-3
- Workplan
  - Literature review and engineering analysis
  - Crash testing
  - Report and recommendations



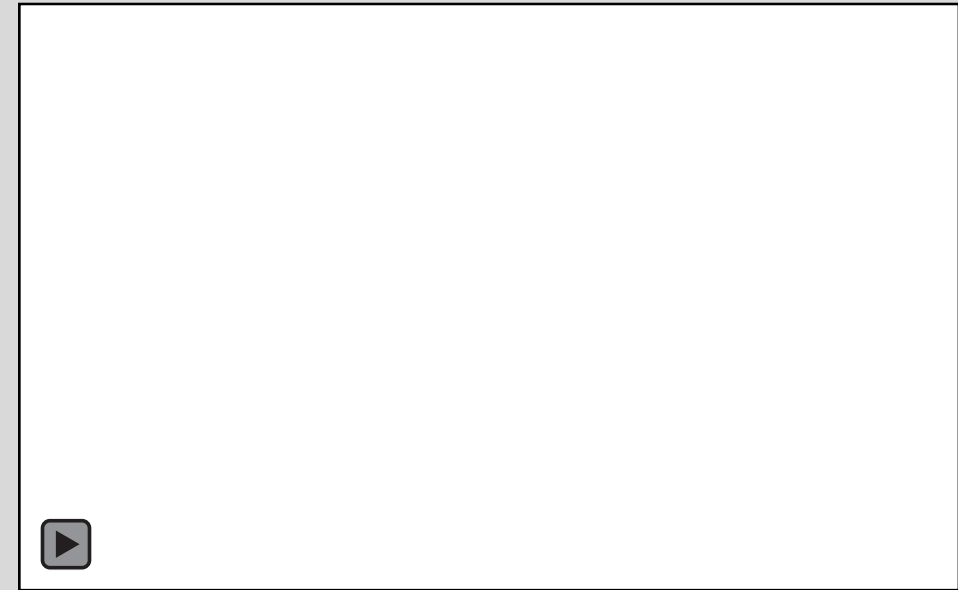
# Development and Evaluation of a Non-Proprietary Sign Support System for MASH TL-3 (T4541-EC)

- 3 lb/ft U-Channel, 7-ft mounting height, 24"x30" aluminum sign panel



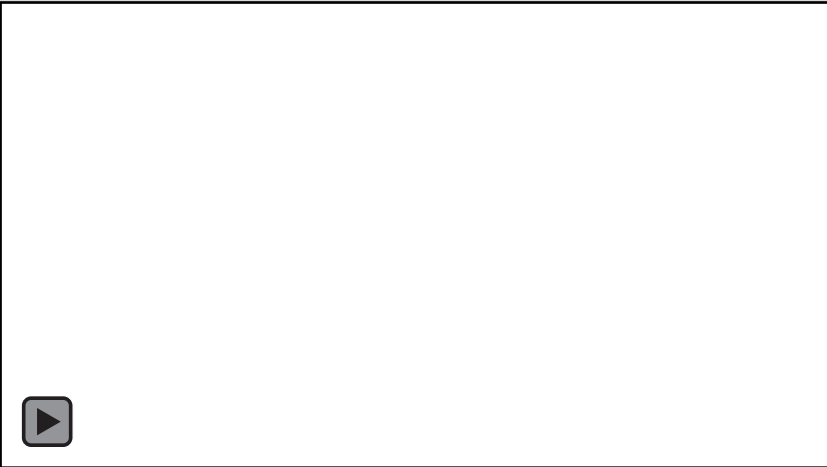
# Development and Evaluation of a Non-Proprietary Sign Support System for MASH TL-3 (T4541-EC)

- MASH Test 3-62 (90°) – passed
- MASH Test 3-62 (0°) – failed



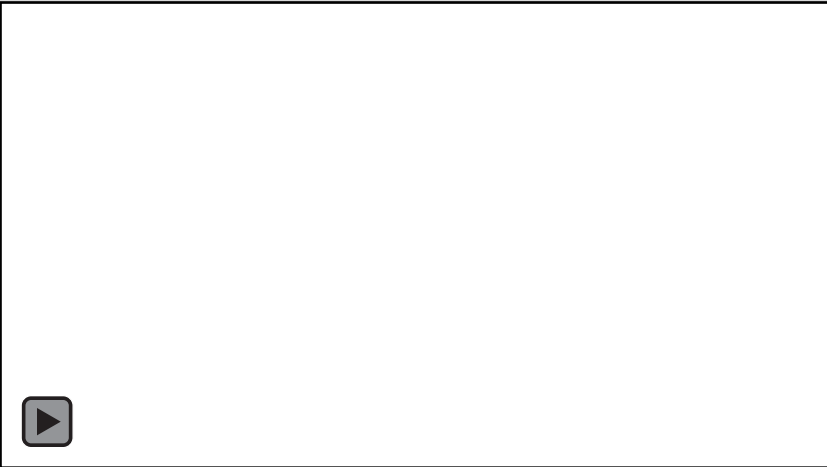
Windshield deformation= 3.75 inches  
Roof deformation = 4.875 inches

# Development and Evaluation of a Non-Proprietary Sign Support System for MASH TL-3 (T4541-EC)



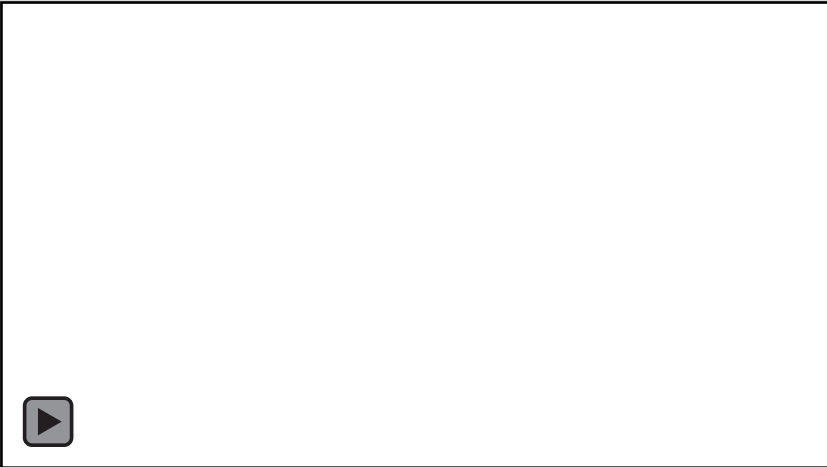
8-ft mounting height

Pass



Added U-Channel post

Fail – roof deformation



44 mi/h impact speed (TL-2)

Fail – windshield penetration

# Development and Evaluation of a Non-Proprietary Sign Support System for MASH TL-3 (T4541-EC)

- Report posted on website

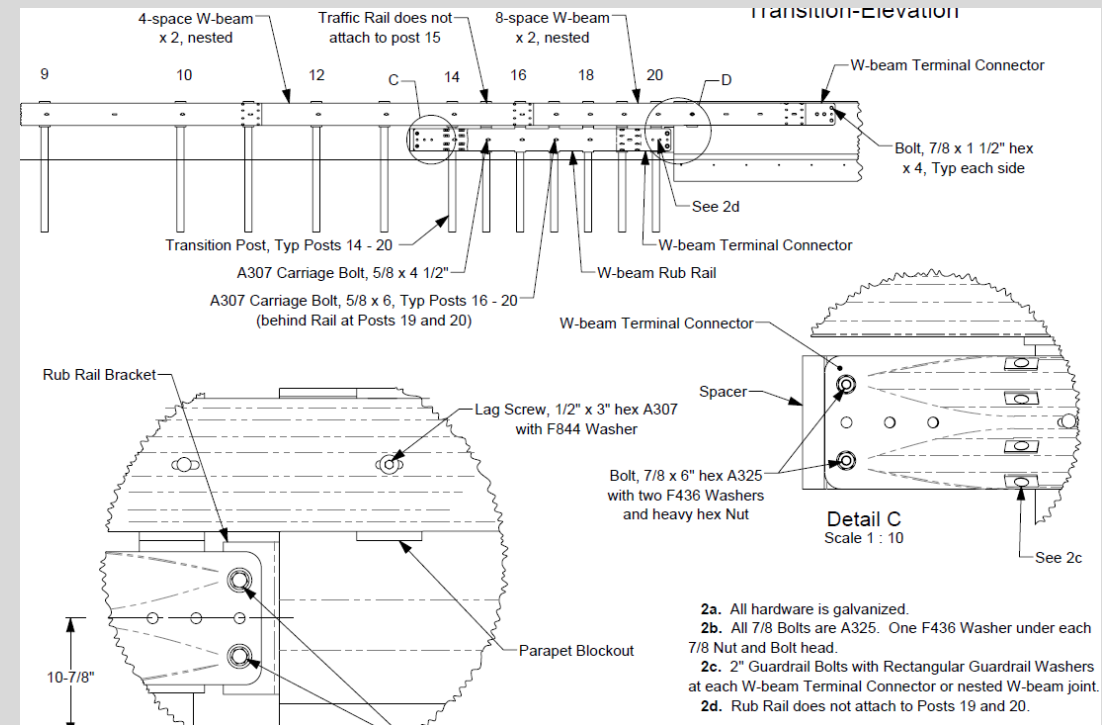
# MASH TL-3 Evaluation of a Median Guide Rail Transition to Median F-Shape Barrier (T4541-FB)

- Status: Ongoing
- Research Need
  - MASH TL-3 compliant transition for median guide rail to median f-shape concrete barrier
- Objectives
  - Develop guidelines for MASH TL-3 transition for median guide rail to median f-shape concrete barrier
  - Evaluate range of barrier heights and other barrier shapes
- Workplan
  - Literature review
  - Computer simulations
  - MASH Test 3-21
  - Report



# MASH TL-3 Evaluation of a Median Guide Rail Transition to Median F-Shape Barrier (T4541-FB)

- Transition developed using simulation
  - Identified critical height (32") and barrier (F-Shape)
- Test installation constructed



# MASH TL-3 Evaluation of a Median Guide Rail Transition to Median F-Shape Barrier (T4541-FB)





# MASH TL-3 Evaluation of a Median Guide Rail Transition to Median F-Shape Barrier (T4541-FB)

- MASH Test 3-21 performed
  - Occupant risk values acceptable
  - Pending occupant compartment measurements
- Final Report Pending



# Evaluation of Open Joints in Concrete Bridge Rail Systems (T4541-FG)

- Status: Ongoing
- Research Need
  - Determine when a joint can be left open
  - Determine when a cover plate is needed
  - Develop details of cover plate
- Objectives
  - Develop guidance for concrete bridge rail systems with open joints larger than 2 inches
- Workplan
  - Literature review and survey
  - Computer simulation
  - Engineering analysis
  - Report
- Work Completed
  - Survey is in progress



# MASH TL-3 Evaluation of Sign Posts with Flashing Beacon Equipment (T1969-AF)

- Status: Ongoing
- Research Need
  - Flashing equipment is regularly installed to standard roadside sign installations
  - Equipment ranges in type, weight, attachment, and location
- Objectives
  - Evaluate crashworthiness of standard sign support system with flashing equipment
- Workplan
  - Literature review and survey
  - Engineering analysis
  - Crash testing
  - Report
- Work Completed
  - Literature review conducted and survey is in progress

