

ORIGINATION FORM

THE INFORMATION BELOW IS TO BE PROVIDED BY THE ORIGINATOR (The person who receives or originates the issue and needs to forward the issue for action.)

Specification: Specification Number, 102

Subject: MAINTENANCE OF TRAFFIC

Origination date: 06/08/10

Originator: Cheryl Adams

Office/Phone: Roadway Design / (850) 414-4327

Problem statement: This specification is updated to reflect industry changes to vehicle and equipment lights, incorporating the new AASHTO Manual for Assessing Safety Hardware (MASH) for crashworthiness of devices, adding Temporary Raised Rumble Strip Sets and Automated Flagger Assistance Devices, and deleting separate payment for restoring/replacing damaged crash cushions.

Proposed solution: The proposed changes will keep our specification current with industry practices and standards.

Information source: Maintenance of Traffic Committee.

Recommended Usage Note: All Jobs

Estimated fiscal impact, if implemented:

Implementation of these changes, if and when approved, will begin with the January 2011 letting.



Florida Department of Transportation

CHARLIE CRIST
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

STEPHANIE KOPELOUSOS
SECRETARY

MEMORANDUM

DATE: July1, 2010
TO: Specification Review Distribution List
FROM: Rudy Powell, Jr., P.E., State Specifications Engineer
SUBJECT: Proposed Specification: **1020509 Maintenance of Traffic.**

In accordance with Specification Development Procedures, we are sending you a copy of a proposed specification change.

These changes were proposed by Cheryl Adams of the State Roadway Design Office to update Section 102 to reflect current industry practices and standards by:

- adding new requirements for vehicle and equipment visibility.
- incorporating the new AASHTO Manual for Assessing Safety Hardware (MASH) for crashworthiness of devices.
- adding Temporary Raised Rumble Strip Sets and Automated Flagger Assistance Devices (AFAD's).
- deleting separate payment for restoring/replacing damaged crash cushions.

Please share this proposal with others within your responsibility. Review comments are due within four weeks and should be sent to Mail Station 75 or to my attention via e-mail at ST986RP or rudy.powell@dot.state.fl.us. Comments received after **July 30, 2010** may not be considered. Your input is encouraged.

RP/dt
Attachment

MAINTENANCE OF TRAFFIC.
(REV 6-14-10)

SUBSECTION 102-5.9 (of the Supplemental Specifications) is deleted and the following substituted:

102-5.9 Vehicle and Equipment Visibility: Equip all pickups and automobiles used on the project with a minimum of one Class 2 amber or white warning light that meets the Society of Automotive Engineers Recommended Practice SAE *J595, dated November 1, 2008, or SAE J845, dated December 1, 2007, and incorporated herein by reference. Existing lights that meet the Society of Automotive Engineers Recommended Practice J845, dated March, 1992, or SAE J1318, dated April, 1986, may be used to its end of service life. Lights should be unobstructed by ancillary vehicle equipment such as ladders, racks or booms.* If the light is obstructed, additional lights will be required. The lights shall be operating when a vehicle is in a work area where a potential hazard exists, when operating the vehicle at less than the average speed for the facility while performing work activities, making frequent stops or called for in the plans or Design Standards.

Equip all other vehicles and equipment with a minimum of 4 ft² of retroreflective sheeting or flashing lights.

To avoid distraction to motorists, do not operate the lights on the vehicles or equipment when the vehicles are outside the clear zone or behind a barrier.

ARTICLE 102-7 (of the Supplemental Specifications) is deleted and the following substituted:

102-7 Traffic Control Officer.

Provide uniformed law enforcement officers, including marked law enforcement vehicles, to assist in controlling and directing traffic in the work zone when the following types of work is necessary on projects:

1. Traffic control in a signalized intersection when signals are not in use.
2. When Standard Index No. 619 is used on Interstate at nighttime and called for in the plans.
3. When *Standard Index No. 655 Traffic Pacing for overhead work* is called for in the plans or approved by the Engineer.
4. When pulling conductor/cable above an open traffic lane on limited access facilities, when called for in the plans or approved by the Engineer.

ARTICLE 102-9.1 (of the Supplemental Specifications) is deleted and the following substituted:

102-9.1 Installation and Maintenance: Install and maintain temporary traffic control devices as detailed in the plans, Index -600 of the Design Standards and when applicable, in accordance with the approved vendor drawings, as provided on the Qualified Products List (QPL) or the Approved Products List (APL). Erect the required temporary traffic control devices

to prevent any hazardous conditions and in conjunction with any necessary traffic re-routing to protect the traveling public, workers, and to safeguard the work area. Use only those devices that are on the QPL or the APL. Immediately remove or cover any devices that do not apply to existing conditions.

All temporary traffic control devices must meet the requirements of National Cooperative Highway Research Program Report 350 (NCHRP 350) *or the Manual for Assessing Safety Hardware 2009 (MASH)* and current FHWA directives. Manufacturers seeking evaluation must furnish certified test reports showing that their product meets all test requirements set forth by NCHRP 350 *or the MASH*. Manufacturers seeking evaluation of Category -I devices for inclusion on the QPL shall include the manufacturer's self-certification letter. Manufacturer's seeking evaluation of Category -II and *Category* -III devices for inclusion on the QPL shall include the FHWA WZ numbered acceptance letter with attachments and vendor drawings of the device in sufficient detail to enable the Engineer to distinguish between this and similar devices. For devices requiring field assembly or special site preparation, vendor drawings shall include all field assembly details and technical information necessary for proper application and installation and must be signed and sealed by a Professional Engineer registered in the State of Florida. Manufacturers seeking evaluation of Category -IV devices for inclusion on the QPL or APL must comply with the requirements of Section -990 and include detailed vendor drawings of the device along with technical information necessary for proper application, field assembly and installation.

Ensure that the QPL or APL number is permanently marked on the device at a readily visible location. *Sheeting used on devices is exempt from this marking requirement.*

Notify the Engineer of any scheduled operation, which will affect traffic patterns or safety, sufficiently in advance of commencing such operation to permit his review of the plan for the proposed installation of temporary traffic control devices.

Ensure an employee is assigned the responsibility of maintaining the position and condition of all temporary traffic control devices throughout the duration of the Contract. Keep the Engineer advised at all times of the identification and means of contacting this employee on a 24-hour basis.

Keep temporary traffic control devices in the correct position, properly directed, clearly visible and clean, at all times. Ensure that all traffic control devices meet acceptable standards as outlined in American Traffic Safety Services Association (ATSSA's) "Quality Guidelines for Temporary Traffic Control Devices and Features". Immediately repair, replace or clean damaged, defaced or dirty devices.

SUBARTICLE 102-9.3 (of the Supplemental Specifications) is deleted and the following substituted:

102-9.3 Business Signs: Provide and place signs in accordance with the plans and Design Standards. Furnish signs having retroreflective sheeting meeting the requirements of Section 990. ~~and blue background with a 4 inches series B white legend and a white border. The maximum sign size is 24 by 36 inches.~~

Use signs with specific business names on each sign. Install logos provided by business owners and approved by the Engineer. Standard Business entrance signs meeting the

requirements of Index 17355 without specific business names may be used only with the approval of the Engineer.

SUBARTICLE 102-9.5.2 (of the Supplemental Specifications) is deleted and the following substituted:

102-9.5.2 Barrier Wall (Temporary): Furnish, install, maintain, remove and relocate a temporary barrier wall in accordance with the plans. Ensure that temporary concrete barrier wall for use on roadway sections, complies with ~~Section 521 and~~ Index No. 412, 415 or 414 as specified in the plans. Ensure that temporary concrete barrier wall for use on bridge and wall sections, complies with Index No 414 as specified in the plans. Ensure that temporary water filled barrier wall used on roadway sections meets the NCHRP Report 350 criteria *or the MASH* and is listed on the Qualified Products List (QPL). Barriers meeting the requirements of Index No. 412, 415 or temporary water filled barriers on the QPL will not be accepted as an alternate to barriers meeting the requirements of Index No. 414.

SUBARTICLE 102-9.14 (of the Supplemental Specifications) is deleted and the following substituted:

102-9.14 Truck Mounted Attenuators and Trailer Mounted Attenuators: Furnish, install and maintain only those attenuators that meet the requirements of NCHRP 350 *or the MASH*.

Use Truck Mounted Attenuators or Trailer Mounted Attenuators, when called for in the Design Standards. Use attenuators listed on the QPL.

When attenuators are called for, use either a truck mounted attenuator or a trailer mounted attenuator system designed and installed in accordance with the manufacturers recommendations.

Equip the attenuator cartridge with lights and reflectors in compliance with applicable Florida motor vehicle laws, including turn signals, dual tail lights, and brake lights. Ensure that lights are visible in both the raised and lowered positions if the unit is capable of being raised.

Ensure that the complete unit is painted DOT yellow (Fed. Std. 595 b, No. 13538). Stripe the rear facing of the cartridge in the operating position with the alternating 6 inch white and 6 inch safety orange 45 degree striping to form an inverted "V" at the center of the unit and slope down and toward the outside of the unit, in both directions from the center. In the raised position, place at least the same square footage of striping on the bottom of the cartridge as placed on the rear facing cartridge in the open position. Use Type III retroreflectorized sheeting for striping.

Attenuators will not be paid for separately. Include the cost of the truck with either a truck mounted attenuator or a trailer mounted attenuator in Maintenance of Traffic Lump Sum. Payment includes all costs, including furnishing, maintaining and removal when no longer required, and all materials, labor, tools, equipment and incidentals required for attenuator maintenance.

ARTICLE 102-9 (of the Supplemental Specifications) is expanded by the following:

102-9.15 Temporary Raised Rumble Strip Sets- *Furnish, install, maintain, remove, and reinstall temporary raised rumble strip sets, as a traffic-warning device to alert motorists of lane closure using flagging operations on a two-lane, two-way, roadway.*

Install the temporary raised rumble strip sets per the manufacturer's recommendations.

Apply four temporary raised rumble strips per set, with each strip spaced 5 -feet apart, center to center. Place one set of temporary raised rumble strips 100² feet in advance of each warning sign approaching the flagging station, for a total of four sets, in each direction of the roadway.

The temporary raised rumble strip may be either a removable polymer striping tape or a molded engineered polymer material.

After positioning temporary raised rumble strips, roll with a static weighted roller according to the manufacturer's recommendations ensuring strips are completely conformed to the road surface and all edges are firmly adhered.

Use temporary raised rumble strips that may be entirely removed from the asphalt or concrete pavement without the use of heat, solvents, grinding, or blasting. If temporary rumble strips are reused, remove strips from the pavement and store in accordance with manufacturer's recommendation.- Upon the next deployment, clean and re-dress with manufacturer's supplied adhesive. -Follow manufacturer's recommendations for number of reuses per strip.

If the temporary raised rumble strips lose their bond to the pavement, replace as directed by the Engineer.

Provide certification to the Engineer from the manufacturer that the temporary raised rumble strips meets either of the above specifications.

102-9.16 Automated Flagger Assistance Devices (AFAD): *Furnish, install, maintain, remove and relocate the AFAD's in accordance with the plans and Design Standards. Position the AFAD's where they are clearly visible to oncoming traffic and out of the lane of traffic to control traffic through temporary traffic control zones in accordance with the details shown in the plans and Design Standards. The devices may be operated either by a single flagger at one end of the traffic control zone, from a central location or by a separate flagger near each device's location.*

The AFAD may be either a remotely controlled Stop/Slow AFAD mounted on either a trailer or a movable cart system, or a remotely controlled Red/Yellow Lens AFAD.

Meet the crashworthy performance criteria contained in the National Cooperative Highway Research Program (NCHRP) Report 350, "Recommended Procedures for the Safety Performance Evaluation of Highway Features" or the MASH (see the MUTCD Section 6F.01).

AFAD's will not be paid for separately. The AFAD may be used as a supplement or an alternate to flaggers in accordance with Index 603. Include the cost for AFAD's in Maintenance of Traffic Lump Sum.

SUBARTICLE 102-11 (of the Supplemental Specifications) is expanded by the following Subarticle:

102-11.20 Temporary Raised Rumble Strips: *The quantity of temporary raised rumble strips~~s~~ Sets to be paid for will be the number of temporary raised rumble trip sets installed and accepted.*

SUBARTICLE 102-13.12.1 (of the Supplemental Specifications) is deleted and the following substituted:

102-13.12.1 Redirective: Price and payment will be full compensation for furnishing, installing, -maintaining (*including restoring or replacing damaged*) and subsequently removing such crash cushions.

~~Payment for restoring damaged crash cushions will be the manufacturer's/distributor's invoice price for the new materials/parts plus 20% markup. The 20% markup is compensation for all necessary work, including but not limited to labor, equipment, supplies and profit, as authorized by the Engineer. Additional MOT required for the repair of the crash cushion will be paid for under the appropriate MOT pay item.~~

SUBARTICLES 102-13.20 and 102-13.21 (of the Supplemental Specifications) are deleted and the following substituted:

102-13.20 Temporary Raised Rumble Strips: *Prices~~s~~ and payments~~s~~ will be full compensation for all work and materials described in this Section, including all cleaning and preparing of surfaces, disposal of all debris, furnishing of all materials, application, curing, removal, reinstalling and protection of all items, protection of traffic, furnishing of all tools, machines and equipment, and all incidentals necessary to complete the work.*

~~102-13.220 Work Zone Pavement Markings:~~ ~~Prices and payments will be full compensation for all work specified -including, all cleaning and preparing of surfaces, furnishing of all materials, application, curing and protection of all items, protection of traffic, furnishing of all tools, machines and equipment, and all incidentals necessary to complete the work. Final payment will be withheld until all deficiencies are corrected.~~

Removable Tape may be substituted for work zone paint at no additional cost to the Department.

Payment for Temporary Retroreflective Pavement Markers used to supplement line markings will be paid for under Temporary Retroreflective Pavement Markers. Install these markers as detailed in the Design Standards.

102-13.231 Payment Items: Payment will be made under:

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| Item No. 102- 1- | Maintenance of Traffic - lump sum. |
| Item No. 102- 2- | Special Detour - lump sum. |
| Item No. 102- 3- | Commercial Materials for Driveway Maintenance - per cubic yard. |
| Item No. 102- 14- | Traffic Control Officers - per hour. |
| Item No. 102- 60- | Work Zone Signs - per each per day. |
| Item No. 102- 61- | Business Signs - each. |

Item No. 102- 71-	Barrier Wall - per foot.
Item No. 102- 94-	Glare Screen - per foot.
Item No. 102- 73-	Guardrail (Temporary) - per foot.
Item No. 102- 74-	Barricade (Temporary) - per each per day.
Item No. 102- 76-	Advanced Warning Arrow Panel - per each per day.
Item No. 102- 77-	High Intensity Flashing Lights (Temporary - Type B) - per each per day.
Item No. 102- 78-	Temporary Retroreflective Pavement Markers - each.
Item No. 102- 79-	Lights, Temporary, Barrier Wall Mount - per each per day.
Item No. 102- 81-	Crash Cushion (Gating) (Temporary) –per location.
Item No. 102- 89-	Crash Cushion (Temporary) - per location.
Item No. 102- 99-	Portable Changeable Message Sign (Temporary) - per each per day.
Item No. 102-104-	Temporary Traffic Control Signals (Portable) - per each per day.
Item No. 102-104-	Temporary Traffic Control Signals (Fixed) - per each per day.
Item No. 102-107-	Temporary Traffic Detection - per day.
Item No. 102-150-	Portable Regulatory Signs - per each per day.
Item No. 102-150-	Radar Speed Display Unit - per each per day.
<i>Item No. 102-910-</i>	<i>Temporary Raised Rumble Strips Set – per set</i>
Item No. 102-911-	Removable Tape (White/Black) - per foot.
Item No. 102-912-	Removable Tape (Yellow) - per foot.
Item No. 710-	Painted Pavement Markings.
Item No. 711-	Thermoplastic Traffic Stripes and Markings.