Florida Department of Transportation

RICK SCOTT
GOVERNOR

605 Suwannee Street
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ANANTH PRASAD, P.E.
SECRETARY

August 4, 2011

Monica Gourdine
Program Operations Engineer
Federal Highway Administration
545 John Knox Road, Suite 200
Tallahassee, Florida 32303

Re: Office of Design, Specifications
Section **990**
Proposed Specification: **9900301 Temporary Traffic Control Device Materials.**

Dear Ms. Gourdine:

We are submitting, for your approval, two copies of the above referenced Supplemental Specification.

These changes were proposed by Stefanie Maxwell of the State Construction Office to modify the language for consistency with the MUTCD and to clarify when to use Type B and Type C arrow boards.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via Email to SP965RP or rudy.powell@dot.state.fl.us.

If you have any questions relating to this specification change, please call Rudy Powell, State Specifications Engineer at 414-4280.

Sincerely,

Signature on file

Rudy Powell, Jr., P.E.
State Specifications Engineer

RP/dt
Attachment
cc: Calvin Johnson, Chief Civil Litigation
Florida Transportation Builders' Assoc.
State Construction Engineer

TEMPORARY TRAFFIC CONTROL DEVICES AND MATERIALS.
(REV 6-15-11)

SUBARTICLE 990-3.1.4 (of the Supplemental Specifications) is deleted and the following substituted:

990-3.1.4 Support Chassis: The Support Chassis shall meet the following:

(a) The support chassis shall be self-contained and self-supporting without the use of additional equipment or tools.

(b) Both trailer and truck-mounted units are allowed for arrow ~~panels~~*boards*. Trailer mounted units are required for changeable message signs, regulatory signs and radar speed display units.

(1) Trailer mounted unit:

(a) The sign, power supply unit and all support systems shall be mounted on a wheeled trailer.

(b) The trailer shall be equipped with Class-A lights, using a plug adaptor.

(c) The trailer shall be equipped with adjustable outrigger leveling pads, one on each of the four frame corners.

(d) The trailer shall be designed to be set up at the site with its own chassis and outriggers, without being hitched to a vehicle.

(e) The trailer shall be equipped with fenders over the tires and shall be made from heavy-duty material sufficient to allow a person to stand and operate or perform maintenance on the unit.

(f) The trailer shall meet all equipment specifications set forth in Chapter 316 of the Florida Statutes, and by such rule, regulation or code that may be adopted by the Department of Highway Safety and Motor Vehicles.

(g) The trailers should be delineated on a permanent basis by affixing retroreflective material, known as conspicuity material, in a continuous line on the face of the trailer as seen by oncoming road users.

(2) Truck mounted unit:

(a) The truck-mounted assembly shall be designed to fit on a 1/2 ton or greater duty truck.

(b) The unit shall be self-contained with its own power supply, controls, raising and lowering device and shall be capable of being operated by one person.

(c) The unit shall be secured in the vehicle for normal operation.

SUBARTICLE 990-3.2.1 (of the Supplemental Specifications) is deleted and the following substituted:

990-3.2.1 Arrow Board Matrix:

(a) The minimum legibility distance for various traffic conditions are based on the decision-sight distance concept. The minimum legibility distance is the distance at which a driver can comprehend the arrow ~~panel~~ *board* message on a sunny day or a clear night. The arrow ~~panel~~ *board* size that is needed to meet the legibility distance is listed as follows:

Type	Minimum Size	Minimum Number of ~~Panel Lamps~~*Elements*	Minimum Legibility Distance
B	30 by 60 inches	13	3/4 mile
C	48 by 96 inches	15	1 mile

~~For use on the state highway system, the~~ Type~~s "~~B~~" or "C" advance warning~~ arrow boards may be used *on*~~for~~ low to intermediate *speed* (0 to 50 mph) facilities ~~and~~ *or* for maintenance or moving operations on ~~high~~*any*~~-~~ speed ~~roadways~~*facility*. Type ~~"~~C~~"~~ arrow boards shall be used *for all other operations* on high~~-~~-speed (50 mph and ~~up~~*greater*) *facilities and may be substituted for Type B arrow boards on any speed facility*.

(b) Devices shall meet all arrow board displays identified in the MUTCD.

(c) The ~~lamp~~ *element* lens should be 5 3/4 inches in diameter. Smaller ~~lamp~~ *element* lens diameters are permissible only if they provide an equivalent or greater brightness indication and meet the legibility criteria in Section (a) of this Specification.

(d) The color of the light emitted shall be in accordance with the MUTCD.

(e) There shall be a 360-degree hood for close-up glare reduction.

(f) For solar powered arrow boards the bulbs shall provide a 350-candle power intensity for day use and an automatic reduction or dimming capacity for night use. The dimmed night operation shall provide adequate indication without excessive glare.

(g) The flashing rate of the ~~lamps~~ *element* shall not be less than 25 nor more than 40 flashes per minute as required in the MUTCD.

(h) The minimum ~~lamp~~ *element* "on time" shall be 50% for the flashing arrow and 25% for the sequential chevron.

ARTICLE 990-8 (of the Supplemental Specifications) is deleted and the following substituted:

990-8 Work Zone Signs.

Provide steel flanged U-channel or Square Tube steel meeting the mechanical requirements of ASTM A 499, Grade 60. For each U-channel or Square Tube, punch or drill 3/8 inch diameter holes on 1 inch centers through the center of the post, starting approximately 1 inch from the top and extending the full length of the post. Ensure that the weight per foot of a particular manufacturer's post size does not vary more than ~~±~~*plus or minus* 3~~ 1/2~~*.5*% of its specified weight per foot. Taper the bottom end of the post for

easier installation. Machine straighten the U-channel to a tolerance of 0.4% of the length. Use only non-corrosive metal, aluminum, or galvanized steel attachment hardware. Work zone sign systems shall be one of the products listed on the QPL.

TEMPORARY TRAFFIC CONTROL DEVICES AND MATERIALS.
(REV 6-15-11)

SUBARTICLE 990-3.1.4 (of the Supplemental Specifications) is deleted and the following substituted:

990-3.1.4 Support Chassis: The Support Chassis shall meet the following:

(a) The support chassis shall be self-contained and self-supporting without the use of additional equipment or tools.

(b) Both trailer and truck-mounted units are allowed for arrow boards. Trailer mounted units are required for changeable message signs, regulatory signs and radar speed display units.

(1) Trailer mounted unit:

(a) The sign, power supply unit and all support systems shall be mounted on a wheeled trailer.

(b) The trailer shall be equipped with Class-A lights, using a plug adaptor.

(c) The trailer shall be equipped with adjustable outrigger leveling pads, one on each of the four frame corners.

(d) The trailer shall be designed to be set up at the site with its own chassis and outriggers, without being hitched to a vehicle.

(e) The trailer shall be equipped with fenders over the tires and shall be made from heavy-duty material sufficient to allow a person to stand and operate or perform maintenance on the unit.

(f) The trailer shall meet all equipment specifications set forth in Chapter 316 of the Florida Statutes, and by such rule, regulation or code that may be adopted by the Department of Highway Safety and Motor Vehicles.

(g) The trailers should be delineated on a permanent basis by affixing retroreflective material, known as conspicuity material, in a continuous line on the face of the trailer as seen by oncoming road users.

(2) Truck mounted unit:

(a) The truck-mounted assembly shall be designed to fit on a 1/2 ton or greater duty truck.

(b) The unit shall be self-contained with its own power supply, controls, raising and lowering device and shall be capable of being operated by one person.

(c) The unit shall be secured in the vehicle for normal operation.

SUBARTICLE 990-3.2.1 (of the Supplemental Specifications) is deleted and the following substituted:

990-3.2.1 Arrow Board Matrix:

(a) The minimum legibility distance for various traffic conditions are based on the decision-sight distance concept. The minimum legibility distance is the distance at which a driver can comprehend the arrow board message on a sunny day or a clear night. The arrow board size that is needed to meet the legibility distance is listed as follows:

Type	Minimum Size	Minimum Number of Elements	Minimum Legibility Distance
B	30 by 60 inches	13	3/4 mile
C	48 by 96 inches	15	1 mile

Type B arrow boards may be used on low to intermediate speed (0 to 50 mph) facilities or for maintenance or moving operations on any speed facility. Type C arrow boards shall be used for all other operations on high-speed (50 mph and greater) facilities and may be substituted for Type B arrow boards on any speed facility.

(b) Devices shall meet all arrow board displays identified in the MUTCD.

(c) The element lens should be 5 3/4 inches in diameter. Smaller element lens diameters are permissible only if they provide an equivalent or greater brightness indication and meet the legibility criteria in Section (a) of this Specification.

(d) The color of the light emitted shall be in accordance with the MUTCD.

(e) There shall be a 360-degree hood for close-up glare reduction.

(f) For solar powered arrow boards the bulbs shall provide a 350-candle power intensity for day use and an automatic reduction or dimming capacity for night use. The dimmed night operation shall provide adequate indication without excessive glare.

(g) The flashing rate of the element shall not be less than 25 nor more than 40 flashes per minute as required in the MUTCD.

(h) The minimum element “on time” shall be 50% for the flashing arrow and 25% for the sequential chevron.

ARTICLE 990-8 (of the Supplemental Specifications) is deleted and the following substituted:

990-8 Work Zone Signs.

Provide steel flanged U-channel or Square Tube steel meeting the mechanical requirements of ASTM A 499, Grade 60. For each U-channel or Square Tube, punch or drill 3/8 inch diameter holes on 1 inch centers through the center of the post, starting approximately 1 inch from the top and extending the full length of the post. Ensure that the weight per foot of a particular manufacturer’s post size does not vary more than plus or minus 3.5% of its specified weight per foot. Taper the bottom end of the post for easier installation. Machine straighten the U-channel to a tolerance of 0.4% of the length. Use only non-corrosive metal, aluminum, or galvanized steel attachment hardware. Work zone sign systems shall be one of the products listed on the QPL.