7000000 Highway Signing
COMMENTS FROM INTERNAL/INDUSTRY REVIEW

Mary Anne Koos
850-414-4321

Comment: (6-10-13) Shouldn't they be removed to be flush. If in the sidewalk a pedestrian could trip over and if in the grass a mower would hit them? Probably need to revise beginning to say "Removal or relocation…."

700-2.1.67.2 Removal or Relocation of Signs: *Relocation of signs shawill consist of removing the existing sign assembly and installing the sign on a new foundation.*

When the Plans call for existing ground-mounted signs to be relocated or removed, immediately remove supports and footings that project more than 6 inches above ground surface after removing the sign panel from the assembly. Remove existing footings to a depth at least 12 inches below the ground surface. Restore the area of the sign removal or relocation to a similarthe condition of the immediateadjacent area. The costs will be included in the Contract unit price of the item to which it is incidental.

Response:

****

Melissa Hollis
melissa.hollis@dot.state.fl.us

Comment: (6-12-13) (1) Delete 700-2.1.6 and 700-2.1.7; Measurement and Payment for all static signs is covered under 700-2.3 and 700-2.4.
(2) 700-4 DMS: Verify that pay item structure includes ground mount/single post installation.
(3) We need to address payment for "special design" signs in the pay item structure.

Response: (1) Subarticles 700-2.1.6, & 2.1.7 have been deleted. (6-13-13 Spec's Office)

****

Karen Byram
karen.byram@dot.state.fl.us

Comment: (6-20-13) The intent of identifying the two types of sign sheeting, Type IV and Type XI, is to differentiate between the intensity of the retroreflectance. Therefore, a statement should be added to the specification that states: Type XI sign sheeting cannot be substituted for Type IV sign sheeting.

Response:

****

MaryJo Lewis
mklewis1@mmm.com

Comment: (6-24-13) 700-1.2.43 Retoreflective Sign Sheeting Requirements: Use signs that meet the material and process requirements of Section 994. Use Type XI sheeting for all regulatory, warning and overhead signs. All the red ink signs must use a sheeting system that includes a

colorless film overlay. 3M is aware of the red ink durability issues in Florida weathering. While a UV-protective overlay film can provide improvement in weathering performance, it is not entirely fool-proof in terms of other performance parameters, depending upon the experience and attention of the sign fabricator. The absolute requirement for an overlay film does not allow for improved ink development options that could obviate the need for the addition of a film. We recommend language that allows but does not require the use of an overlay film – for any sign sheeting system (as described in 994) when it is needed to meet the weathering requirements outlined in specification 994. (See attachment to e-mail with appendix)

Response:

****

Tillander, Trey
trey.tillander@dot.state.fl.us

Comment: (6-25-13) Shouldn't 700-5.2.9, 700-5.2.10, and 700-5.2.12 all be under 700-5.2.8?

Response:

****

Steven Norkus
steve.norkus@pppcatalog.com

Comment: (7-1-13)
I would like to comment on the proposed use of type XI sheeting for the use on Regulatory,Warning and Guide signs. I am on the ASTM sign and pavement markings committee and involved with TRB as well. From the data and the research done over the last several years pertaining to Night time visibility and the repercussions from the lack of proper signs I feel that the State of Florida would benefit from the use of this material. We are in a state in which elderly drivers either move here for the weather or enjoy a winter vacation.We also know 1 out of 5 of us in the next10 years will be 65 years or older on Florida highways. The largest population of baby boomers will be retiring which will increase nighttime driving by elders to a new record.To give the driver a more advanced warning for a Stop sign or Warning sign Could make all the difference in the world.We also know that the Type XI sheeting has and excellent lifespan and will pay for itself based on the long service life in the field.

Response:

****

douglas prager
dgprager@hotmail.com

Comment: (7-2-13) Type XI sheeting increases our safety factor and is a cost effective tool to ensure visibility of critical signs. Some states have removed external lighting when using this sheeting. For Florida it means in times of extreme weather conditions we will have the best possible signs for low light, or no light conditions often associated with storms and power outages.

Response:

****

Katie Bettman
904-360-5391
Katie.bettman@dot.state.fl.us

Comment: (7-2-13)
Why have we changed shall to must? Is there a different meaning in these two verbs? Most specifications use the verb shall.

Response:

****

John Simms
863-227-4997
jsimms@acmebarricades.com

Comment: (7-3-13) 700-2.1.1 states that mutli post sign assemblies will be installed on aluminum tube or I-beams. Will the aluminum tube option be put back into the FDOT Mutli-post sign program, and the U-channel removed if it will no longer be accepted? 700-2.2.2.1.2 states that the Engineer will allow hand mixing by approved methods. Can a definition of "approved methods" since this has become an issue in many areas lately? This is generally done by using a bag mix (Sakrete, Quickrete) and lately we have been asked to have QC on site and test this concrete, which on any projects I have done this on it has always passed, all test. Could the specs state that testing of this concrete per Section 346 not be required if Manufactures direction for mixing and placing is followed?

Response:

Paul Gentry
paul.gentry@dot.state.fl.us

Comment: (7-3-13) Text: 1. 700-1.2.4 Does the use of any "red color" on any sign require the use of the colorless film overlay. It is understood for stop, yield and Do not Enter signs, but there are occasions where a sign is manufactured with "small signs that are red" placed on the bigger sign. This question was proposed to myself by a sign manufacturer.
2. If we are going to be downgrading sheeting from Type's VIII and IX (these are presently designated as a Type VII sheeting) down to a Type IV sheeting, are we going to allow Type XI sheeting to also be included in our Type IV sheeting on the QPL?
3. Since we are unable to get the "one" manufacturer of orange mesh to submit to the department for Q.P.L. inclusion, can we remove the Q.P.L. requirement for this particular type of product?

Response:

Kevin Malia
kevin@ntsigns.com
Comment: (7-3-13) I support the type XI sheeting specification. The increased reflectivity will enhance visibility on guide signs and traffic control signage. Also, the increased life of the sheeting will maintain a higher minimum level of reflectivity and improve safety for drivers.

Response:

****

John Mueller
ADDCO
612-810-8620
jcmueller@addco.com

Comment: (7-3-13) The ADDCO BRICK is a pioneer for the sign industry. ADDCO has significantly expanded industry solutions to real-time information by inventing this unique and innovative approach to DMS. BRICK, a Modular Message Sign System, is the first and only sign of its type.
BRICK is environmentally sealed, eliminating the need for additional protection from any weather conditions. While traditional DMS require bulky, heavy, and unsightly sign cases for protection, the ADDCO BRICK alleviates these design needs. This greatly expands the possibilities where legibility, size, weight, lead times and environmental durability are of formidable concern. The weatherproof modular components are designed to withstand harsh elements, providing exceptional legibility in all types of weather. No fans! No filters! No A/C! No heaters, defrosters or defoggers!
It is our desire that FDOT evaluates the BRICK for what it is, a revolutionary and innovative design that for the last 16 years has altered the traditional DMS paradigm for the better across the U.S. and the world. We have many customers in Florida in particular that have purchased and are currently using the BRICK successfully in a wide variety of applications. Please contact me if you would like to discuss any of the points we've identified in the attached specification review. Thank you for giving us the opportunity for consideration.

***700-4 Dynamic Message Signs*:**

700-4.1 Sign Types: Dynamic Message Signs (DMS) must meet the requirements of NEMA TS4-2005. Dynamic Message Signs ~~(DMS)~~ are classified by the type of sign display and the type of mechanical construction. Provide monochrome, tri-color, or full-color signs as shown in the Contract Documents. Use only equipment and components that meet the requirements of these minimum specifications and are listed on the Department's Approved Product List (APL).
ADDCO is in Compliance with the NEMA TS4-2005specification for monochrome (amber LED) DMS.

***700-4.1.1 Front Access DMS:** Ensure that front access signs meet the requirements of NEMA TS4 2005, section 3.2.5.*
ADDCO is in Compliance

***700-4.1.3 Embedded DMS:** Embedded DMSs are DMSs that are typically mounted to Ground Traffic Signs, Overhead Traffic Signs, or Overhead Cantilever Traffic Signs.*
ADDCO is in Compliance

***700-4.2 Sign Housing Requirements for all DMS:** Ensure that the external skin of the sign housing is constructed of aluminum alloy 5052 H32 that is a minimum of 0.125 inch thick*

for walk-in DMS and 0.090 inch thick for front and embedded DMS. Ensure the interior structure is constructed of aluminum. Ensure that the sign housing design and appearance is approved by the Engineer. Ensure that no internal frame connections or external skin attachments rely upon adhesive bonding or rivets.

ADDCO is in Compliance

Ensure the sign housing meets the requirements of NEMA TS4 2005, section 3.2.8 for convenience outlets.

N/A with ADDCO Brick sign technology.

700-4.2.2 Sign Housing for Front Access and Embedded DMS: *Ensure front access and embedded signs meet the requirements of NEMA TS4 2005, section 3.2.4. Ensure access does not require specialized tools or excessive force to operate.*

ADDCO is in Compliance

700-4.2.3 Housing Face requirements for all DMS: *Ensure the sign face meets the requirements of NEMA TS4 2005, section 3.1.3. Ensure that all sign face surfaces are finished with a matte black coating system that meets or exceeds American Architectural Manufacturers Association (AAMA) Specification No. 2605. Provide certification that the sign face parts are coated with the prescribed thickness. Except for Embedded DMS, ensure the sign face includes a contrast border that meets the requirements of NEMA TS4 2005, section 3.1.6.*

ADDCO is in Compliance

700-4.2.3.2 Housing Face for Front Access and Embedded DMS: *Any exposed fasteners on the housing face ~~shall~~must be the same color and finish as the housing face. Only captive fasteners ~~sha~~will be used on the housing face.*

ADDCO Brick Displays are mounted or held into place by spring loaded lockdown fasteners. They are of the same color and finish as the housing face, but are not captive by design.

700-4.2.3.3 External Fascia Panels: *If the sign includes external fascia panels, ensure that they are constructed using aluminum. Finish each fascia panel with a matte black coating system that meets or exceeds AAMA Specification No. 2605.*

ADDCO is in Compliance

700-4.2.3.4 Lens Panel Assembly: *If sign includes lens panel assemblies, ensure they are modular in design, removable, and interchangeable without misalignment of the lens panel and the light-emitting diode (LED) pixels. The lens panel assembly must consist of an environmental shielding layer coating to protect and seal the LEDs and internal electronics. The coating ~~shall~~must be a minimum 90% ultraviolet (UV) opaque. Lens panels must have a matte black coating that meets or exceeds AAMA Specification No. 2605. Lens panels must include a mask constructed of 0.080 inch minimum thickness aluminum. Ensure that the mask is perforated to provide an aperture for each pixel on the display module. Ensure that the apertures do not block the LED output at the required viewing angle.*

ADDCO Brick Displays do not use lens panel assemblies.

700-4.2.4 Sign Housing Ventilation System:

N/A with ADDCO Brick sign technology.

700-4.2.5 Sign Housing Temperature Sensor: *Ensure that the sign controller continuously measures and monitors the temperature sensors. Ensure that the sign blanks when a critical temperature is exceeded and that the sign will report this event when polled. Ensure that remote and local computers can read all temperature measurements from the sign controller.*

N/A with ADDCO Brick sign technology.

700-4.2.6 Sign Housing Humidity Sensor:

N/A with ADDCO Brick sign technology.

700-4.2.7 Sign Housing Photosensors:

ADDCO is in Compliance

700-4.3 Display Modules: *Provide display modules manufactured by one source and fully interchangeable throughout the manufacturer's sign system(s). Ensure that removal or replacement of a complete display module or LED board can be accomplished without the use of special tools.*

ADDCO is in Compliance

700-4.3.1 LED and Pixel Specifications: *Ensure that LED lamps have a minimum viewing angle of 30 degrees.*

ADDCO is in Compliance

Provide a pixel test as a form of status feedback to the transportation management center (TMC) from the local sign controller. Ensure that the operational status of each pixel in the sign can be automatically tested once a day. Ensure that the pixel status test determines the functional status of the pixel as defined by the pixel Failure Status object in National Transportation Communications for ITS Protocol (NTCIP) 1203v0239 and does not affect the displayed message for more than half a second.

ADDCO's approach to pixel diagnostics is more exhaustive than the typical method implemented by other manufactures, in addition to the standard electronic results we incorporate a visual verification element that adds a higher level of confidence.

700-4.3.2 Optical, Electrical, and Mechanical Specifications for Display Modules: *Ensure the display modules are rectangular and have an identical vertical and horizontal pitch between adjacent pixels. Ensure that the separation between the last column of one display module and the first column of the next module is equal to the horizontal distance between the columns of a single display module. Full-color signs must have a pitch equal to or less than 35mm.*

The ADDCO Standard Density Brick display module have an identical vertical and horizontal pixel pitch of 70mm. The ADDCO High Density Brick display module has a horizontal pixel pitch of 40mm and a vertical pitch of 43mm or vice versa depending on the Brick orientation, which is nominal and not perceivable by traffic viewers.

Ensure that there are a minimum of two power supplies that are wired in a parallel configuration for redundancy. Ensure that if one or 25% of the supplies in a group, whichever is greater, completely fails, the sign shall still be supplied with enough power to run 40% of all pixels at a 100% duty cycle with an ambient operating temperature of 165°F.

ADDCO is in Compliance

Ensure that the sign controller continuously measures and monitors all LED module power supply voltages and provides the voltage readings to the TMC or a laptop computer on command.

N/A with ADDCO Brick sign technology.

700-4.4 Characters, Fonts, and Color: *Ensure that the signs are capable of displaying American Standard Code for Information Interchange (ASCII) characters 32 through 126, including all uppercase and lowercase letters and digits 0 through 9, at any location in the message line. Submit a list of the character fonts to the Engineer for approval.*

ADDCO is in Compliance

700-4.5 Main Power Supply and Energy Distribution Specifications:

ADDCO is in Compliance

700-4.6 Uninterruptible Power Supply (UPS):

ADDCO is in Compliance

700-4.8 Components: All components must meet the requirements of NEMA TS4 2005, ~~s~~Section 8.

ADDCO is in Compliance

700-4.8.1 Mechanical Components:

ADDCO is in Compliance with all hardware specifications.

700-4.8.2 Sign Controller: *Ensure that the sign controller monitors the sign in accordance with NEMA TS4 2005, ~~s~~Section- 9. Ensure the sign monitors the status of any photocells, LED power supplies, humidity, and airflow sensors. Ensure sign controllers use fiber optic cables for data connections between the sign housing and ground-level cabinet.*

ADDCO is in Compliance

700-4.8.3 Display System Hardware: *Ensure the sign utilizes a system data interface circuit for communications between the sign controller and display modules. Except for embedded DMS, ensure that the following components reside inside the sign housing: sign controller (master or slave), display system interface circuits, display modules, power supplies, local and remote control switches, LED indicators, Electronic Industries Alliance (EIA)-232 null modem cables (minimum of 4 feet long for connecting laptop computer to sign controller), and surge protective devices.*

Other than surge protection devices, which are located in a separate junction box on the sign structure, the ADDCO Brick sign technology does not require these components inside the sign housing. They are located in the ground level control cabinet for ease of service. The ADDCO Brick DMS is 100% maintenance free.

700-4.8.4 Control Cabinet:

ADDCO is in Compliance

700-4.8.5 Sign Controller Communication Interfaces:

ADDCO is in Compliance

700-4.9 Message and Status Monitoring:

ADDCO is in Compliance

Response:

****

Moe Madar
312-543-0907
moe.madar@averydennison.com

Comment: (7-4-13)
700-1.2.4 Retroreflective Sign Sheeting: Avery does not produce a permanent Fluorescent Yellow or Yellow-green, or a fluorescent orange.

Response:

D4

Comment: (7-5-13) District 4 Const. has the following comments: 700-2.1 Materials: Multi-column signs mention aluminum tubing, however the 2013 Design Standards only include W or S columns. 700-2.2.5 "dimidions" should be "dimensions" Not sure the DMS's belong in this section. Although they have "sign" in their description, they are a component of an ITS system and much differnt than a static sign.

Response:

****