

SECTION 02765**PAVEMENT MARKINGS AND TRAFFIC SIGNS****PART 1 - GENERAL**

1.01 SCOPE

This section consists of pavement markings and traffic signs on the Drawings, specified herein and as required for a complete installation.

1.02 QUALITY ASSURANCE

- A. The phrase "DOT Specifications" shall refer to the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition. The DOT Specifications, are referred to herein and are hereby made a part of this Contract to the extent of such references, and shall be as binding upon the Contract as though reproduced herein in their entirety.
- B. Pavement markings for this Project shall conform to the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition. Pavement markings removed or obliterated by the Contractor's operations shall be promptly replaced in kind to the satisfaction of the Dade County Department of Public Works, Traffic Engineering Division, or other authority having jurisdiction over the work area.

1.03 CERTIFICATION

The Contractor shall furnish the manufacturer's certification that all signs furnished conform to these specifications and shall replace or repair at his expense all signs that fail to meet this requirement.

PART 2 - PRODUCTS

2.01 PAVEMENT MARKING

Paint for pavement strips shall be as specified in Part 3, Execution.

2.02 REFLECTIVE MARKERS

Reflective markers shall be installed in the pavement in accordance with OSHA, DOT and Dade County Public Works requirements.

2.03 TRAFFIC SIGNS

- A. General: Traffic regulating signs shall conform to the colors, dimensions and requirements of the Manual on Uniform Traffic Control Devices (ANSI) and displaying the lettering and symbols indicated on the Drawings.

- B. Sign Panels and Support Members: Sign panels and support members shall conform to Aluminum Association Alloy 6061-T6.
- C. Bolts: Bolts shall conform to Aluminum Association Alloy 2024-T4 with an anodic coating 0.0002-inches thick minimum and chromate sealed.
- D. Nuts: Nuts shall conform to Aluminum Association Alloy 6269-T9.
- E. Reflective Sheeting: Reflective sheeting shall conform to DOT Type A requirements.
- F. Construction Warning Signs: The CONTRACTOR shall install traffic and warning signs during construction in accordance with OSHA, DOT and Dade County Public Works requirements.

PART 3 - EXECUTION

3.01 TRAFFIC PAINT

- A. This type of pavement painting shall be used where no thermoplastic paint is required or as temporary paint during the time required for paving "cure" prior to application of thermoplastic paint markings.
- B. Traffic paint used for this work shall conform with the requirements of Section 971-12 of the Florida Department of Transportation Standard Specifications for Road and bridge Construction, or, at the Contractor's option, fast dry traffic paint, as specified in D.O.T. Specifications, Section 971-13, may be used.
- C. The colors of the paint shall be yellow or white, as existed before the repair.
- D. All equipment shall be of a type and design which will readily produce the required uniformity of application of the stripes, both as to thickness of coating and alignment. The paint machine shall be of the spray type, capable of spraying the paint to the required "spread" without thinning of the paint. The paint tank shall be equipped with a mechanical agitator. The nozzle shall have cut-off valves which will apply broken or "skip" lines automatically. Each nozzle shall also be provided with suitable line guides, either metallic shrouds or air blasts.
- E. Painting shall be done only during daylight hours and, as far as practicable, shall be terminated in time to permit sufficient drying by sunset. No paint shall be applied when moisture is present on the surface to be painted or when the air temperature is below 40 degrees F. Painting shall not be done when winds are sufficient to cause spray dust.
- F. The surface which is to be painted shall be cleaned, by compressed air or other effective means, immediately before the start of painting, and shall be clean and dry when the paint is applied. Any vegetation or soil shall be removed from the pavement before edge striping is begun.
- G. The paint shall be thoroughly mixed before it is poured into the painting machine and no thinning of the paint will be allowed at any time. Before the start of each day's work, the

paint container, the connections, and the spray nozzles on the machine shall be thoroughly cleaned with paint thinner or other suitable cleaner.

- H. The traffic stripe shall be of the specified width, with clean, true edges and without sharp breaks in the alignment. A uniform coating of paint shall be obtained and the finished stripe shall contain no light spots or paint skips. Any stripes which do not have a uniform, satisfactory appearance, both day and night, shall be corrected.
- I. All newly painted stripes, including edge stripes, shall be protected until the paint is sufficiently dry to permit vehicles to cross the stripe without damage from the tires. While the center line stripes are being painted, all traffic shall be routed away from the painting operations and the newly painted stripe. When necessary, a pilot car shall be used to protect the painting operations from traffic interference.
- J. Any portions of the stripes damaged by passing traffic or from other causes shall be repainted.
- K. Paint for temporary pavement markings shall also be used where thermoplastic markings are to be applied after the asphaltic concrete has "cured." The cure time shall be based on thermoplastic manufacturer's recommendations. However, in accordance with FDOT requirements, asphalt shall have been in place for 30 days before application of thermoplastic stripe.

3.02 THERMOPLASTIC TRAFFIC STRIPES AND MARKINGS

- A. Thermoplastic pavement markings, including stripes, pavement messages, stop bars, directional arrows, reflective pavement markers and other miscellaneous items, shall be replaced as existed before the repair was made. The thermoplastic compound shall be extruded or sprayed onto the pavement surface in a molten state by mechanical means, with surface application of glass spheres, when required. Upon cooling to ambient pavement temperature, the compound shall produce an adherent pavement marking of specified thickness and width and capable of resisting deformation.
- B. The colors of the compound shall be white or yellow, as existed before the repair.
- C. Where thermoplastic markings are to be applied to concrete pavement, a sealing primer, as specified in F.D.O.T. Specifications Section 711-2.2, shall be applied in advance of the placing of the stripes.
- D. The thermoplastic shall be applied to the pavement utilizing either extrusion or spray application equipment. The application equipment shall be so constructed as to provide continuous mixing and agitation of the material. Conveying parts of the equipment between the main material reservoir and the shaping die or gun shall be so constructed as to prevent accumulation and clogging. The equipment shall be constructed so that all mixing and conveying parts up to and including the shaping die or gun, maintain the material at the plastic temperature with heat transfer oil or electrical element controlled heat. Direct fire heat transfer will not be allowed.

- E. The application equipment shall be so constructed as to insure continuous uniformity in the dimensions of the stripe. The applicator shall provide a means for cleanly cutting off square stripe ends and shall provide a method of applying "skip" lines. The use of pans, aprons, or similar appliances which the die overruns will not be permitted.
- F. Glass spheres applied to the surface of the completed stripe shall be applied by an automatic bead dispenser attached to the striping machine in such a manner that the beads are dispensed almost instantaneously upon the installed line.
- G. Special kettle(s) shall be provided for melting and heating the thermoplastic material. The kettle(s) shall be equipped with automatic thermostatic control devices to provide uniform temperature control and prevent overheating of the material. The applicator and kettle(s) shall be equipped and arranged as to satisfy the requirements of the National Fire Underwriters, the State of Florida, Dade County and any municipal authority applicable to where the work is being done.
- H. Applicators shall be mobile and maneuverable to the extent that straight lines can be followed and normal curves can be made in a true arc. The applicator equipment to be used on roadway installations shall consist of either hand equipment or truck mounted units depending on the type of marking required.
- I. The hand applicator equipment shall be insulated, have sufficient capacity to hold 150 pounds of molten material, and be sufficiently maneuverable to install crosswalks; lane, edge and center lines; arrows and legends.
- J. The truck mounted unit for lane, edge and center lines shall consist of a mobile self-contained unit carrying its own material capable of operating at a minimum speed of five miles per hour while installing striping.
- K. Application time, weather limitations and surface preparation shall be in accordance with F.D.O.T. Specifications Sections 710-4, 710-5 and 710-8. In accordance with FDOT requirements, asphalt shall have been in place for 30 days before application of thermoplastic stripe.
- L. The material, when formed into traffic stripes or other markings, shall be readily renewable by placing an overlay of new material directly over an old line of compatible material in such a manner that no splitting or separation takes place.
- M. The application temperature shall be within the range specified by the manufacturer of the thermoplastic compound being used.
- N. All pavement edge lines, gore, island and diagonal strip markings, bike lane symbols and messages, wherever located, shall have a minimum thickness of 0.060 inch at the edges and a maximum thickness of 0.120 inch at the center. A minimum average film thickness of 0.060 inch shall be maintained. All lane lines, center lines, transverse markings (except shoulder markings) and pavement markings within traffic wearing area (such as dotted turning guide lines) shall have a minimum thickness of 0.090 inch at the edges and a maximum thickness of 0.188 inch at the center. A minimum average film thickness of 0.090

shall be maintained. All thickness measurements shall be an average in any three foot length.

- O. The glass sphere top coating shall be applied by a type of glass sphere dispenser or gun which will embed the spheres into the line surface to at least one-half their diameter. The glass sphere top coating shall not incur more than a 10 percent loss during the first 30 days of traffic exposure.
- P. Reflective pavement markers shall be installed as they existed before the repair. They shall be replaced with the appropriate color or colors and oriented in the correct direction as specified in Section 706 of the F.D.O.T. Specifications. Paving markings for this Project shall conform to the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, as revised by the governing agency.

3.03 FABRICATION

Preparation of sign blanks and fabrication of reflectorized faces shall conform to the applicable requirements of DOT Sections 700-4 and 700-5.

END OF SECTION