

## TRAFFIC CONTROL SIGNALS AND DEVICES

### SECTION 603

#### GENERAL REQUIREMENTS FOR THE INSTALLATION AND EVALUATION OF TRAFFIC CONTROL SIGNALS AND DEVICES

##### **603-1 Description.**

The provisions contained in this Section include general requirements for all traffic control signals and devices.

##### **603-2 Equipment and Materials.**

**603-2.1 General:** Except as provided in 603-2.2, only use traffic control signals and devices meeting the requirements of the Minimum Specifications for Traffic Control Signals and Devices (MSTCSD), the Contract Documents, and listed on the Department's Approved Product List (APL).

Only use new equipment and materials, except as specified in the Contract Documents.

**603-2.2 Exceptions:** The Department may grant exceptions to the requirements of 603-2.1 by temporary permit to evaluate new technology or for other circumstances that are found to be in the public interest.

**603-2.3 Uniformity:** Only use compatible units of any one item of equipment, such as signal heads, detectors, controllers, cabinets, poles, signal system or interconnection equipment, etc.

**603-2.4 Hardware and Fittings:** Ensure that all bolts and nuts less than 5/8 inch in diameter are passivated stainless steel, Type 316 or Type 304 and meet the requirements of ASTM F593 and ASTM F594 for corrosion resistance.

Ensure that all bolts and nuts 5/8 inch and over in diameter are galvanized and meet the requirements of ASTM A307.

Use high-strength steel anchor bolts and U-bolts, having a minimum yield strength of 55,000 psi and a minimum ultimate strength of 90,000 psi.

**603-2.5 Galvanizing:** Meet the requirements of Section 962 when galvanizing for fittings and appurtenances for all structural steel (including steel poles).

##### **603-3 Definitions.**

**Traffic Control Signals and Devices:** Any signal or device, manually, electrically or mechanically operated by which traffic is alternately directed to stop and permitted to proceed or controlled in any manner. Traffic control signals and devices regulate, warn, or guide traffic on, over or adjacent to a street, highway, pedestrian facility, or bikeway by authority of a public agency having jurisdiction. Traffic control signals and devices include, but are not limited to, controller assemblies (controller cabinets and their contents); signal heads including their hanging or mounting devices; vehicle detection systems (loops, sealant, amplifier, lead-in wire, or cable); pedestrian detection systems (push button, push button housing, lead-in wires, and signal); motorist information systems, video equipment, network devices, dynamic message signs, highway advisory radios, cameras, vehicle detection systems, and other equipment used within a traffic control system.

Minimum Specifications for Traffic Control Signals and Devices (MSTCSD): The minimum specifications used for the evaluation, certification, and approval of official traffic control signals and devices and ancillary devices for use on the streets and highways of Florida. The specifications are available on the Traffic Engineering and Operations web site.

Approved Product List (APL): A listing of approved traffic control signals and devices, and ancillary devices or system equipment that the Department has reviewed for compliance to specifications and authorized for use on the streets and highways of Florida. The APL is available on the Traffic Engineering and Operations web site.

Temporary Permit: A permit issued by the Traffic Engineering and Operations Office to a public or private entity for the purpose of evaluating the operational effectiveness and safety of a device for a specified time period at specific locations. This permit is issued only when the limited use of the device is in the best interest of the public.

#### **603-4 Systems Approval Requirement.**

The Engineer will review and approve any system design plan of traffic control signals and devices, that is controlled or operated from a remote location by computers or similar devices, and which affects the movement of traffic on any portion of the State Highway System, prior to installation. Within such system, only use traffic control signals and devices that meet all certification or approval requirements contained herein.

#### **603-5 Device Approval Process.**

The Department's APL certification and approval process is described in the FDOT Traffic Engineering Manual, Section 7.1

#### **603-6 Marking of Approved Equipment.**

Ensure that traffic control signals and devices are marked in accordance with Section A601 of the MSTCSD.

#### **603-7 Submittal Data Requirements.**

Prior to the installation of equipment and within 30 days after the preconstruction conference, submit a completed listing of all traffic control signals, devices, or hardware with Department APL approval numbers to the Engineer for approval on the form provided by the Department. For non-structural equipment or materials that do not have a Department APL approval number, submit one copy of the manufacturer's descriptive literature and technical data fully describing the equipment to the Engineer for approval.

Develop shop drawings for all structural support materials and other special designs, such as non-electrical, non-mechanical, or other fabricated items, which may not be specifically detailed in the Plans. Have the Specialty Engineer approve all shop drawings. Do not submit shop drawings for those items that have been previously evaluated and approved. Meet the requirements of 5-1.4 for shop drawings. Send two copies of the shop drawings signed and sealed by the Specialty Engineer to the Engineer.

Provide a complete operable signal installation as specified in the Contract regardless of any failure of the Department to discover or note any unsatisfactory material. Meet the requirements of Section 608.

**603-8 Documentation for Electronic Equipment.**

Prior to final acceptance, furnish the Engineer with two copies of the following documentary items obtained from the manufacturer for the electronic equipment listed below:

1. Operation Manual
2. Troubleshooting and Service Manual
3. Assembly and installation instructions
4. Pictorial layout of components and schematics for circuit boards
5. Parts list, including the location
6. Diagram of the field installation wiring (not applicable to the detectors)
7. Warranty information

Furnish documentary items for the following equipment:

1. Controllers
2. Vehicle detectors
3. Load switches
4. Flasher units
5. Preemption units
6. Conflict monitors
7. Special sequence relays
8. Cameras
9. Dynamic message signs
10. Highway advisory radios
11. Road weather information systems
12. Any other equipment which has a logic, timing, or communications function
13. Other equipment specified in the Contract Documents

**603-9 Department-Furnished Equipment Installed By Contractor.**

Where the Contract includes installation of Department-furnished equipment, the Department will turn over such equipment to the Contractor when the construction progress allows or as designated in the Contract Documents. The Department will test and certify the equipment to be in proper condition and ready to use and will bear the costs of correcting any defects in the equipment prior to pick-up by the Contractor. The Engineer will coordinate the pick-up and installation of the equipment. Maintain the equipment in proper operational condition after pick-up at no cost to the Department, until either final acceptance or the equipment is returned to the Department.