

October 26, 2005

**TRAFFIC ENGINEERING DIRECTIVE
601-4**

Supersedes TED 601-3

SUBJECT: PREPARATION OF MAINTENANCE OF TRAFFIC PLANS

Maintenance of Traffic Design shall conform to current Specifications (Section 636) and the latest edition of the West Virginia Division of Highways Manual, "Traffic Control for Street and Highway Construction and Maintenance Operations."

- A. In the design of Maintenance of Traffic, the following items are to be given consideration:
1. The designer shall develop a Conceptual Maintenance of Traffic scheme including detours. This will generally require a sequence of construction by phases or stages and depict and/or describe each phase or stage.
 2. If temporary crossovers, runarounds, or detour roads are used, details showing geometric data, typical sections, plans and profiles shall be included in the project. See DD-686 "Temporary Median Crossovers" for guidelines for design when this applies. Any traffic control devices that differ from the standard cases shall also be depicted. Crossovers and runarounds shall be designed to handle the normal highway operating speed unless otherwise indicated in scope of project.
 3. Temporary lighting should be used on any Interstate or expressway crossover. The design shall be 240V - 250W HPS Cobra Head with 35 or 40 feet mounting height. Alternate designs, e.g. 240V - 400W HPS Vector-Turnpike luminaire with 35 or 40 feet mounting height shall require pre-approval by Traffic Engineering Division. The designer is responsible for arranging power services.
 4. Temporary Concrete Barrier (TCB) will normally be used for a positive separation between two-way traffic placed on one side of a divided highway with high-speed facilities, e.g., Interstate or expressway highways. TCB or tubular markers may be used for separation for low speed environments. Asphalt traffic dividers with tubular markers may also be considered for low speed environments. TCB or Half Barrier (modified TCB) may be used for some conditions, e.g. bridges or to protect the work area. TCB shall not be used as a channelizing device. When used, Temporary Concrete Barrier shall have a minimum length of 100 feet. TCB ends shall be protected by Temporary Impact Attenuators, guardrail (temporary), or shall be flared away

at a flare rate not to exceed that given for the appropriate speed as noted in the latest edition of "Roadside Design Guide." TCB ends can also be protected by connecting to other guardrail (with appropriate connection), or extended beyond the clear zone. Special delineators, usually B-1's, shall be used on TCB spaced at 20 feet facing traffic. Often Glare Barrier is necessary on top of TCB in crossovers and other situations. Temporary water filled barrier is a possible alternative to TCB in a few select situations, but such must be pre-approved by Traffic Engineering Division.

5. **Temporary Pavement Marking Tape and/or Temporary pavement marking paint shall be used as called for in the standard cases and/or based on engineering judgment or as determined by Traffic Engineering Division. Temporary raised pavement markers may be used in some situations.**
6. **Flagging shall be provided at locations as described in the standard cases, at locations where project construction equipment is required to cross public roads (e.g. haul roads), and at other locations deemed necessary by the Designer. However, all flagging and subsequent traffic control devices required for the contractor to haul to or from locations beyond or outside the project limits shall be at the contractors expense and their quantity shall not be included in the traffic control items, unless there is a specific problem that needs addressed but such shall be coordinated with the reviewer and Traffic Engineering Division. Examples of locations outside the project limits include storage areas, waste sites or borrow pits (unless these sites are specifically designated in the Plans).**
7. **Temporary traffic signals may require power service arrangements and general layout features. Specific details, notes, etc. are available by contacting Traffic Engineering Division. Timing for the temporary traffic signal(s) will be arranged during construction by Traffic Engineering Division or the District Traffic Engineer unless there is some particular complicated situation.**
8. **Work Zone speed limits may be used at locations where a travel lane is closed, a travel lane width is physically reduced, or there is a detour of a travel lane. Commissioner's Orders dated April 20, 1998 and July 23, 2001 provide the legal authority to establish a work zone speed limit on expressways, or other roads. Copies are available from Traffic Engineering Division.**
9. **Use of use of traffic director, changeable message signs (CMS), shadow vehicle(s), speed monitoring trailer(s), moving flagger, glare barrier, roadside assistance service, use of rolling road blocks, special large sign(s) designs, special additional approach signing, temporary overlays of existing signs, and use of other kinds of devices may be considered but their special needs should be identified for consideration and discussion with the reviewer and Traffic Engineering Division.**

10. Other items to be given consideration are:

- (a) Minimum number of lanes and/or lane widths that must be open to traffic.**
- (b) Time periods (e.g. morning or evening rush hours) or dates (e.g. Holidays etc.) when the contractor is not allowed to work and/or not allowed to close lanes.**
- (c) Nighttime paving shall be seriously considered when closing a lane for four-lane highways in excess of 25,000 ADT and for two-lane highways in excess of 15,000 ADT.**
- (d) Interruption or stopping of traffic (e.g., for setting bridge beams) shall be carefully coordinated to include the maximum closure time and possible penalties.**
- (e) The Dropoff Guidance described in DD-685 shall be carefully considered when preparing the plans to include what happens in various stages/phases.**
- (f) Coordination needed with other public/local officials, private businesses, etc. This includes early input for any special situation needs, special enforcement needs, and use of traffic directors and/or police for traffic control or speed enforcement.**
- (g) Any innovative contracting practices**
- (h) In urban areas or other areas with significant roadside development, it may be necessary to install temporary guide signing to direct motorists to relocated or significantly modified commercial driveways, entrances, or streets leading to residential subdivisions. Should it be determined that temporary guide signing is necessary, notes and or details should be placed in the plans to show the sign dimensions, legend, and location for installation.**

B. The Traffic Control Plan shall typically contain, as a minimum, the following:

- 1. Standard Notes shall include a reference to the latest edition of Section 636 of the Specifications and Supplemental Specifications and to the latest edition of the Manual, "Traffic Control for Street and Highway Construction and Maintenance Operations." Also include additional notes as required.**
- 2. Reduced scale drawings of the project showing all or almost all the phases or stages of construction.**

3. **References to standard cases from the Manual, "Traffic Control for Street and Highway Construction and Maintenance Operations" that apply. Where the standard cases do not apply, details of differences and/or additions to the traffic control devices shall be included. Some phases or stages needed may be adequately described by notes.**
 4. **Special details of detour roads, temporary crossovers, temporary runarounds, temporary traffic signals, temporary lighting, special signing fabrication details, etc. Temporary impact attenuators do not normally require special details, but refer to the standard notes. There may be some special situations requiring approved designs and details.**
 5. **A table summarizing the units for Item 636011-001 "Traffic Control Devices."**
 6. **A "Maintenance of Traffic Summary" by bid items.**
- C. The traffic control plan for most minor projects, e.g. two or three lane roadways with ADT's less than 3,000 that involve widening, reconstruction, relocation, and bridge construction, shall contain as a minimum the following:**
1. **Standard Notes to include a reference to the latest edition of Section 636 of the Specifications and Supplemental Specifications and to the latest edition of the Manual "Traffic Control for Street and Highway Construction and Maintenance Operations." Also include additional notes as required.**
 2. **References to the standard case or cases that apply to the project. If no standard case(s) apply, the designer shall include a special traffic control detail or describe such by notes.**
 3. **A table summarizing the units for Item 636011-001 "Traffic Control Devices."**
 4. **A "Maintenance of Traffic Summary" by bid items.**
- D. The procedure for Submissions and Distributions shall be as follows:**
1. **In general conformance with the latest version of DD-202, Traffic Engineering Division (DT) shall receive 1 copy of construction drawings plus 2 additional copies of maintenance of traffic drawings.**
 - (a) **Preliminary Field Review. Conceptual maintenance of traffic scheme, including detours. Submissions to include plan sheets showing all phases-stages (some minor phases-stages may be covered by notes).**
 - (b) **Final Field Review. Complete Maintenance of traffic scheme including**

sequence of construction.

- (1) Completed plan layout sheets (notes for some phases-stages) as needed above.**
- (2) Notes, Legends, Traffic Control Devices Table, Maintenance of Traffic Summary Table (with bid items).**
- (3) Special Details**

(c) Final Office Review

The entire revised Maintenance of Traffic portion of plans is to be submitted at this review including all quantity tabulations.

Barry Warhoftig, P.E.
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