

801-T-207 TEMPORARY TRAFFIC BARRIERS

(Revised 07-20-23)

The Standard Specifications are revised as follows:

SECTION 108, BEGIN LINE 211, DELETE AND INSERT AS FOLLOWS:

Temporary drainage structures, temporary ~~concrete median~~ traffic barriers, and other temporary devices required and used for the maintenance of traffic shall remain the property of the Contractor. All costs for furnishing, placing, maintaining, removal, and disposal of temporary drainage structures shall be included in the contract lump sum price for maintaining traffic. If there is no pay item for maintaining traffic, these costs shall be included in the various pay items listed in the proposal, unless otherwise provided.

SECTION 801, BEGIN LINE 77, DELETE AND INSERT AS FOLLOWS:

A worksite traffic supervisor certified by the American Traffic Safety Service Association, ATSSA, or approved equal certifying organization, shall direct all field layout, placement, operation, inspection, maintenance, and removal of temporary traffic control devices. The certified worksite traffic supervisor, CWTS, shall ensure that all traffic control devices, ~~except temporary concrete barrier,~~ meet acceptable standards as outlined in the plans, specifications, and ATSSA's "Quality ~~Standards~~ Guidelines for Temporary Traffic Control Devices and Features" prior to installation. *A copy of the ATSSA's "Quality Guidelines for Temporary Traffic Control Devices and Features" shall be provided to the Engineer upon request.* The CWTS shall also, prior to installation, ensure that all traffic control devices can be installed in accordance with the plans, specifications, and the MUTCD. All problems shall be reported to the Engineer so a resolution can be worked out prior to installation. The field layout will be reviewed and is subject to approval by the Engineer prior to placement of any temporary traffic control devices. The CWTS shall be present for the initial setup and all phase changes during the life of the project. The CWTS may designate responsible Contractor personnel to perform day to day operation, inspection, and maintenance of the temporary traffic control devices. These responsible personnel shall work under the direction of the CWTS and their names shall be given to the Engineer on the project. A copy of the CWTS's certification shall be provided to the Engineer prior to the start of construction or placement of temporary traffic control devices or if the worksite traffic supervisor changes.

SECTION 801, BEGIN LINE 139, INSERT AS FOLLOWS:

A temporary traffic control device will be deemed to be in non-compliance when considered Unacceptable. A type of temporary traffic control device will be deemed to be in non-compliance when 25% or more of the individual devices *or temporary concrete barrier segments* are considered Marginal. Damages may be assessed in accordance with 105.14 for non-compliance.

The quality assurance unit for placed temporary concrete barrier shall be the total number of segments installed. Temporary concrete barrier segments that are deemed non-compliant shall be promptly repaired or replaced.

SECTION 801, BEGIN LINE 186, DELETE AND INSERT AS FOLLOWS:

Temporary drainage structures, temporary ~~concrete median~~ traffic barrier units, and other temporary devices required and used for traffic maintenance shall remain the property of the Contractor.

SECTION 801, BEGIN LINE 354, DELETE AND INSERT AS FOLLOWS:

801.10 Temporary Traffic Barriers

Temporary traffic barrier shall be one of the following four types as shown on the plans.

The application for each temporary traffic barrier type shall be as follows:

<i>Temporary Traffic Barrier Type Designation</i>	<i>Application</i>
<i>Type 1</i>	<i>Used to separate two-way traffic</i>
<i>Type 2</i>	<i>Used to separate traffic from the work zone</i>
<i>Type 3</i>	<i>Used in the same manner as Type 1 and remains in place after contract completion.</i>
<i>Type 4</i>	<i>Used to accommodate the closing or shifting of traffic lanes on a daily basis to better facilitate the changing volumes of traffic during the peak hours of a day.</i>

Type 1

~~Type 1 temporary traffic barriers shall be used to separate two way traffic and~~ Barriers used as Type 1 temporary traffic barrier shall be precast concrete in accordance with applicable requirements of 707 and 602 and as shown on the plans. ~~Type 1 barriers may also be used to separate traffic from the work area~~ Barriers acceptable for use as Type 1 may also be used as Type 2.

The surfaces of individual precast ~~units~~ concrete barrier segments shall vary no more than 1/4 in. in 10 ft from the specified cross-section, as measured from a longitudinal straightedge. The maximum variation in the vertical and horizontal alignment of adjacent ~~units~~ abutting segments shall be 1/4 in. across the joint, as measured from a 10 ft longitudinal straightedge. ~~Sections that have obvious defects or visual cracks shall not be used. Sections that develop any of these conditions during the contract shall be repaired with concrete or replaced within a reasonable amount of time. Segment condition and maintenance shall be in accordance with 801.03.~~

~~Type 1 barrier units precast prior to 2003 shall not be used after January 1, 2012. Units precast after March 1, 2003~~ Precast concrete barrier segments manufactured prior to March 1, 2003 shall not be used. Each barrier segment shall be clearly marked with the name or trademark of the manufacturer, the year of manufacture, and "INDOT". The markings shall be indented on an end or on the top of each barrier ~~section~~ segment. ~~Units precast~~ Segments manufactured after January 1, 2007 shall be from the QPL of Certified Precast Concrete Producers.

Type 2

~~Type 2 barriers may be used to separate traffic from the work area.~~ Type 2

temporary traffic barriers shall meet the appropriate test level 2 or 3 ~~MASH or NCHRP 350 or MASH~~ crash test standards and shall be approved for use by the FHWA criteria. A copy of the ~~MASH or NCHRP 350~~ crash test FHWA eligibility letter shall be provided to the Engineer prior to placing the unit report confirming the product is NCHRP 350 or MASH compliant for the test level specified, or a copy of the FHWA eligibility letter, shall be furnished to the Engineer prior to the installation of the barrier.

The ~~unit~~ barrier selected shall be appropriate for the location considering the maximum posted speed limit on the project prior to construction and the allowable area for deflection. The ~~unit~~ barrier shall be installed according to the manufacturer's recommendations.

If concrete barriers are used as Type 2 barriers, they shall be in accordance with the requirements for Type 1 barriers.

Type 3

~~Type 3 temporary traffic barriers shall be those Type 1 temporary traffic barriers that are to~~ Barriers used as Type 3 temporary traffic barrier shall be in accordance with the requirements for barrier used as Type 1. They shall be left in place at the completion of the contract and shall become the property of the Department. They shall be in like-new condition at the completion of the contract. All necessary delineation and required anchor systems shall be left in place.

Type 4

~~Type 4 temporary traffic barriers shall be those types that are intended to be readily moveable to accommodate the shifting of traffic lanes on a daily basis to better facilitate the changing volumes of traffic during the peak hours of a day.~~ Barrier used as Type 4 temporary traffic barriers shall be readily moveable and meet the appropriate test level 3 MASH or NCHRP 350 or MASH crash test standards and shall be approved for use by the FHWA criteria. A copy of the ~~MASH or NCHRP 350~~ crash test FHWA eligibility letter shall be provided to the Engineer prior to placing the unit report confirming the product is NCHRP 350 or MASH compliant for the test level specified, or a copy of the FHWA eligibility letter, shall be furnished to the Engineer prior to the installation of the barrier.

(a) Placement

Temporary traffic barriers shall be located as shown on the plans or as directed. Temporary traffic barriers used to close a lane of traffic shall be flared at the rates as shown on the plans for the applicable regulatory speed within the construction zone. If field conditions are such that the required flare rate cannot be utilized, the tapered alignment may be altered, with approval, to a 10:1 flare rate with a 20 ft minimum offset from the edge of the through traffic lane to the approaching end of the flared temporary traffic barrier. If field conditions are such that that the 10:1 flare rate cannot be utilized, the tapered alignment may be further altered, with approval, to a 6:1 flare rate with the 20 ft minimum offset. Flare rates for ends of temporary traffic barriers at locations where a lane of traffic is not being closed to traffic or where the lane has already been closed shall be the same as above, however the minimum offset from the edge of the through traffic lane may be 10 ft. The use of flare rates sharper than those shown on the plans may require additional traffic control devices as directed.

~~Type 2 barriers shall not be intermixed with Type 1 or Type 3 barriers in any run. Type 2 barriers from different manufacturers shall not be intermixed in any run.~~ Each run of temporary traffic barrier shall be installed and maintained such that abutting segments form a smooth continuous plane, except for the start and end of a flared section.

The cross slope or side slope leading to and on which temporary traffic barrier is placed shall be 10:1 or flatter. For roadways other than freeways or interstates, if field conditions are such that the required slopes cannot be utilized, the temporary traffic barrier may be placed on a side slope of no steeper than 4:1, subject to approval prior to placement.

Temporary traffic barrier shall be flared at the rates as shown on plans for the applicable regulatory speed within the construction zone.

Where temporary traffic barrier is exposed to oncoming traffic and the approaching end is within the construction clear zone distance as shown on plans, an appropriate end treatment shall be placed in accordance with 801.10(e). Where required slopes and barrier flare rates are satisfied, the barrier may be extended beyond the construction clear zone distance without an end treatment.

Where temporary traffic barrier is placed adjacent to the front face of guardrail or concrete barrier, the approaching end of the temporary traffic barrier, including the end treatment, shall overlap a minimum distance beyond the end of the guardrail or concrete barrier as follow:

1. 15 ft if adjacent guardrail terminated with a crashworthy end treatment,
2. 40 ft if adjacent guardrail terminated with a cable terminal anchor,
3. 100 ft if adjacent concrete barrier or cut guardrail.

Where temporary traffic barrier is placed behind guardrail, no portion of the barrier shall be within 10 ft, measured from the front face of the guardrail. The approaching end of the barrier shall overlap a minimum distance beyond the end of the guardrail as described above. If field conditions are such that the required slopes or flare rate cannot be utilized, the temporary traffic barrier shall be placed adjacent to the front face of guardrail as described in this section.

Precast concrete barriers shall not be intermixed with precast concrete barriers of a different size or shape or with any non-concrete barrier in any run. Non-concrete barriers shall not be intermixed with barriers from different manufacturers in any run.

(b) Connection

Precast concrete barriers used as Type 1, Type 2, ~~and~~ Type 3 temporary traffic barriers ~~sections~~ shall be connected as shown on the plans and as follows:

1. Smooth Bar Hooks

- 1a. The ~~adjacent~~*abutting* barrier sections~~segments~~ shall be placed end to end, with sufficient overlapping of the smooth bar hooks to allow placement of the connecting bolt or threaded rod and the top spacer.
- 2b. The ~~adjacent~~*abutting* sections~~segments~~ shall then be moved in opposite directions for a sufficient distance to develop the maximum contact between the smooth bar hooks and the connecting bolt or threaded rod.
- 3c. The bottom spacer and nut shall then be placed as shown on the plans. The nut shall be sufficiently tightened to eliminate all gaps between the adjacent bolt heads, spacers, nuts, and washers which form the connection.

2. *J-J Hook*

- a. *The abutting barrier segments shall be placed in accordance with the manufacturer's recommendations such that the J-J hooks are engaged.*
- b. *The abutting barrier segments shall then be moved in opposite directions for a sufficient distance to develop the maximum separation between the barrier sections.*

~~Type 1 and Type 3 precast units which have previously been cast meeting earlier Department standards may be used. The Contractor will be allowed to mix Type 1 and Type 3 units in a run as long as the units are in good condition and the connecting devices are compatible. If units meeting earlier Department standards are used, a 1 in. bolt will be allowed to link the units together. The spacer detail shall, however, be in accordance with the current standard. Units cast after March 1, 2003 shall be linked with the 1 1/4 in. bolt.~~
Precast concrete barrier connecting devices shall not be intermixed.

~~Type 2~~*Temporary traffic barriers other than precast concrete as described as Type 1 shall be connected as recommended by the barrier manufacturer.*

(c) **Anchorage**

~~Type 1 and Type 3 temporary traffic barriers shall be anchored in accordance with the methods shown on the plans, at the locations described herein. Type 2 barriers shall be anchored as recommended by the barrier manufacturer and at locations described herein. Temporary concrete traffic barriers shall be anchored when located on or within 60 ft of a bridge, and along tapered alignments. Anchoring at locations in addition to those described herein will be required when directed.~~
Temporary traffic barriers shall be anchored at the locations shown on the plans. Anchoring for precast concrete barriers described as Type 1 shall be as shown on the plans.

Anchoring all other barriers shall be in accordance with the associated NCHRP 350 or MASH crash test. A copy of the anchorage installation details shall be furnished to the Engineer prior to installation of the barrier.

Chemical anchor systems with removable bolts, or mechanical anchors may be used to anchor ~~Type 1~~ barriers to bridge decks, concrete pavement, and concrete shoulders. Mechanical anchors may be ferrous or non-ferrous material. ~~All anchors shall have a shear strength of 10,000 lb and an ultimate pullout strength of 6,500 lb.~~

SECTION 801, BEGIN LINE 475, DELETE AND INSERT AS FOLLOWS:

(d) Delineation

~~Type 1~~ *Temporary traffic* barriers used to separate two-way traffic shall be delineated with top mounted temporary barrier delineators and with side mounted delineators. The top mounted delineators shall be two-sided, shall be yellow, and shall be placed on every other section of barrier wall. The top mounted delineators shall be mounted perpendicular to the direction of traffic flow. The side mounted delineators shall be yellow and shall be mounted in accordance with 602.03(f).

Temporary traffic barriers in locations other than separating two-way traffic shall be delineated with either Type C construction warning lights or top mounted temporary barrier delineators and with side mounted barrier delineators. The Type C lights or the top mounted barrier delineators shall be spaced at the number of feet equal to the number of miles per hour in the ~~posted~~ *regulatory* speed limit with a minimum spacing of 20 ft. Bi-directional lenses will be required on the warning lights when the barrier is adjacent to a lane that is carrying alternating one-way traffic. The color of the barrier delineators shall be white when located on the right side of the traffic lane, and yellow when located on the left side of the traffic lane. The color of the barrier delineators shall be white when located adjacent to a lane that is carrying alternating one-way traffic.

SECTION 801, BEGIN LINE 499, DELETE AND INSERT AS FOLLOWS:

(e) End Treatment

Where possible, the ends of temporary traffic barriers shall be ~~flared~~ in accordance with 801.10(a). Where conditions do not allow the temporary traffic barrier to be ~~flared~~ in accordance with 801.10(a), appropriate end treatments shall be ~~incorporated to protect vehicles from the ends of the barriers. The end treatments shall have re-direct capability and shall meet the appropriate test level 2 or 3 NCHRP 350 crash test standards and be approved for use by the FHWA.~~ *installed. All end treatments shall be installed parallel to traffic and the first segment of temporary traffic barrier immediately downstream shall be parallel to the end treatment. The end treatments shall be in accordance with 801.10.1.*

SECTION 801, BEGIN LINE 512, DELETE AND INSERT AS FOLLOWS:

801.10.1 Construction Zone Energy Absorbing Terminal, CZ

The construction zone energy absorbing terminal, CZ, shall ~~have passed NCHRP 350 level 3 crash test~~ *meet the test level 3 NCHRP 350 or MASH crash test criteria* for all Interstate and other construction sites having a ~~construction zone~~ *regulatory* speed limit *prior to construction* in excess of 45 mph. ~~and level 2~~ *The CZ shall meet test level 2* for non-Interstate construction sites having a *regulatory speed limit prior to construction zone speed limit* of 45 mph or less. ~~All energy absorbing terminal, CZ, shall have re-direct capabilities and shall be approved by the FHWA.~~

All energy absorbing terminal, CZ, shall have redirect capabilities. A copy of the crash test report confirming the product is NCHRP 350 or MASH compliant for the test level specified, or a copy of the FHWA eligibility letter, shall be furnished to the Engineer prior to the installation of the unit.
