



## SECTION 617

### CONCRETE TRAFFIC BARRIER

#### SECTION 617.10 PERMANENT CONCRETE TRAFFIC BARRIER

**617.10.1 Description.** This work shall consist of constructing permanent concrete traffic barrier as shown on the plans or as directed by the engineer. For purposes of this specification, permanent concrete traffic barrier will be defined as Type A, B, C, D or any modification of these types.

**617.10.2 Material.** All reinforcing steel shall be Grade 60 deformed bar, and all reinforcing steel and dowels shall be epoxy coated. All material shall be in accordance with Division 1000, Material Details, and specifically as follows:

Item	Section/Specification
Reinforcing Steel for Concrete	1036
Concrete Curing Material	1055
Dowel Bars	1057
Preformed Fiber Expansion Joint Material	1057
Joint Sealer	1057
Joint Filler	1057
Prestressing Strands	AASHTO M 203

#### 617.10.3 Construction Requirements.

**617.10.3.1** Permanent concrete traffic barrier shall be constructed of Class B or B-1 concrete. Concrete shall be air-entrained with 28-day compressive strength of 4000 psi (28 MPa). Material, proportioning, air-entraining, mixing, slump and transporting shall be in accordance with [Sec 501](#). Concrete shall be placed and finished in accordance with [Sec 703](#). Permanent concrete traffic barrier shall be cured in accordance with [Sec 502](#).

**617.10.3.2** Permanent concrete traffic barrier shall be constructed using an extrusion machine or forms specifically designed for constructing cast-in-place reinforced concrete traffic barrier. Precast units will not be permitted. Barriers that do not exhibit a consistent surface shall be corrected to the satisfaction of the engineer.

**617.10.3.3** When extruded construction is used, station numbers shall be indented into the 10-inch (250 mm) high sloped face of the Type A and B barrier and 10 inches (250 mm) above the base of Type C and D barrier in accordance with [Sec 502](#). Station numbers will not be required in the pavement when placed on the concrete traffic barrier.

**617.10.3.4** For retrofit installation, dowels shall be installed in accordance with [Sec 1039.30](#).

**617.10.4 Method of Measurement.** Final measurement will not be made except for authorized changes during construction, or where appreciable errors are found in the contract quantity. The revision or correction will be computed and added to or deducted from the contract quantity. Where required, measurement for each type of permanent concrete traffic barrier, including barrier height transitions, will be made to the nearest 1/2 linear foot (0.1 m)

for each continuous length and totaled to the nearest linear foot (0.5 m) for the sum of the lengths.

**617.10.5 Basis of Payment.** Accepted permanent concrete traffic barrier will be paid for at the contract unit price for each of the types specified in the contract. No direct payment will be made for reinforcing steel, dowels, joint filler material, and sawed joints.

## **SECTION 617.20 TEMPORARY CONCRETE TRAFFIC BARRIER**

**617.20.1 Description.** This work shall consist of furnishing, installing, relocating and removing temporary concrete traffic barrier as shown on the plans or as directed by the engineer. For purposes of this specification, temporary concrete traffic barrier will be defined as Type F concrete traffic barrier.

**617.20.2 Material.** All material shall be in accordance with Division 1000, Material Details, and specifically as follows:

<b>Item</b>	<b>Section/Specification</b>
Temporary Concrete Traffic Barrier	1064
Anchor Bolts	ASTM A 307

**617.20.3 Certification.** The contractor shall provide to the engineer a barrier manufacturer's certification that the barrier furnished is in accordance with the contract documents prior to use.

### **617.20.4 Construction Requirements.**

**617.20.4.1** New temporary concrete traffic barrier will not be required; however, barrier shall be in a serviceable condition during installation and relocation as determined by the engineer. The contractor may use either the two-loop or three-loop style of temporary concrete traffic barrier. The two-loop style of temporary concrete traffic barrier manufactured after January 1, 2004, will not be accepted. When the two-loop and three-loop styles of temporary concrete traffic barrier are used in combination, the keeper pin assembly will be required. Visual cracks in the loop steel will be cause for rejection of the barrier unit by the engineer. Damaged units shall be replaced immediately and removed from the right of way immediately, at the contractor's expense, to the satisfaction of the engineer.

**617.20.4.2** Existing two-loop concrete barrier (manufactured prior to January 1, 2004) owned by contractors or previously accepted two-loop concrete barrier in a manufacturer's stockpile (inventory) will be allowed for use on MoDOT projects as long as the acceptance stamp is legible and the barrier is in acceptable condition. The contractor shall notify district personnel to re-stamp any barrier before the original stamp on the barrier becomes illegible.

**617.20.4.3** All barrier sections shall remain the property of the contractor unless specified otherwise in the contract.

**617.20.4.4** Equipment or material shall be stored a minimum of 4 feet (1.2 m) away from the temporary concrete traffic barrier.

**617.20.4.5** Temporary concrete traffic barrier shall not be anchored unless shown on plans. When anchored barrier is specified, the 1.125-inch (29 mm) diameter anchor bolts shall be embedded a minimum of 12 inches (300 mm), with an approved epoxy. For this anchor system, a minimum of 14-inch (350 mm) concrete bridge deck is required. For concrete bridge decks less than 14 inches (350 mm) in thickness, temporary concrete traffic barrier

shall be anchored with thru bolts, bearing plates, washers and nuts as shown on plans. Temporary concrete traffic barrier shall not be anchored into asphalt pavements and overlays.

**617.20.5 Method of Measurement.** Measurement of temporary concrete traffic barrier and relocated temporary concrete traffic barrier will be made to the nearest 1/2 linear foot (0.1 m) for each continuous length and totaled to the nearest linear foot (0.5 m) for the sum of the lengths. Measurement of temporary concrete traffic barrier height transitions and relocated temporary concrete traffic barrier height transitions will be made per each.

**617.20.6 Basis of Payment.** Accepted temporary concrete traffic barrier and temporary concrete traffic barrier height transitions will be paid for at the contract unit price for each of the pay items included in the contract. Accepted relocated temporary concrete traffic barrier and relocated temporary concrete traffic barrier height transitions will be paid for at the contract unit price for each of the pay items included in the contract.

### **SECTION 617.30 CONCRETE TRAFFIC BARRIER DELINEATORS**

**617.30.1 Description.** This work shall include furnishing, installing and maintaining retroreflectORIZED traffic barrier delineators as shown on the plans or as designated by the engineer.

**617.30.2 Material.** All material shall be in accordance with Division 1000, Material Details, and specifically as follows:

<b>Item</b>	<b>Specification</b>
Retroreflective Sheeting	1042
Delineators	1065

#### **617.30.3 Construction Requirements.**

**617.30.3.1** When concrete traffic barrier is located within 6 feet (1.8 m) of the driving lane, delineators shall be mounted at 25-foot (7.5 m) intervals. For all other concrete traffic barrier installations, delineators shall be mounted at a maximum of 50-foot (15 m) intervals.

**617.30.3.2** Delineator reflector colors shall correspond with pavement marking. Delineators shall be sheeted on one side, facing traffic, unless specified otherwise. Where concrete traffic barrier divides opposing lanes of travel, the delineators shall have retroreflective sheeting on both sides corresponding to adjacent pavement marking.

**617.30.3.2.1** Delineators mounted on permanent concrete traffic barrier shall be anchored with two galvanized mechanical fasteners in accordance with the manufacturer's recommendations.

**617.30.3.2.2** Delineators mounted on temporary concrete traffic barriers shall be mounted to the traffic barrier in accordance with the manufacturer's recommendations.

**617.30.3.3** Any damaged or missing delineators shall be replaced by the contractor at the contractor's expense.

**617.30.4 Basis of Payment.** No direct payment will be made for concrete traffic barrier delineators provided on new permanent concrete traffic barrier or temporary concrete traffic barrier. Delineators specified for installation on existing permanent concrete traffic barrier will be measured and paid for per each.