

TRAFFIC OPERATIONS POLICY DIRECTIVE	NUMBER Unassigned	Page 1 of 2 (plus attachments)
JOSEPH HECKER, CHIEF DIVISION OF TRAFFIC OPERATIONS (Signature) <i>Joseph Hecker</i>	DATE ISSUED 01-18-02	EFFECTIVE DATE Immediately
SUBJECT Temporary railing (Type K) Policy	DISTRIBUTION <input checked="" type="checkbox"/> All District Directors <input checked="" type="checkbox"/> All Deputy District Directors - Traffic Operations <input checked="" type="checkbox"/> All Deputy District Directors - Maintenance <input checked="" type="checkbox"/> All Deputy District Directors - Construction <input checked="" type="checkbox"/> All Deputy District Directors - Project Development <input checked="" type="checkbox"/> LEGAL, Chief Council <input checked="" type="checkbox"/> Engineering Service Center Director <input checked="" type="checkbox"/> All Headquarters Division Chiefs <input type="checkbox"/> Publications (For distribution to all holders of Traffic Manual)	
DOES THIS DIRECTIVE AFFECT OR SUPERSEDE ANOTHER DOCUMENT? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	IF YES, DESCRIBE	
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DIRECTIVE

All temporary installations of Type 50 K-rail shall conform to the following guidelines and policy.

IMPLEMENTATION

Spacing and Dimensions:

In instances where temporary K-rail is placed near the edge of travel way and/or near the edge of excavation the following shall apply:

- Travel lanes should not be less than 3.3 m with a minimum of a 0.3-m shoulder.
- 0.6-m of separation between the back of the Type K railing and the edge of an excavation should be provided whenever possible. **If a separation of less than 0.6 m is necessary to avoid excessive**

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restriction of the traffic lane(s) and shoulder, Type K railing shall be staked as follows:

- A 25-mm diameter, 1000-mm long steel stake shall be driven through each of the four slotted stake holes in each Type K segment.
- The stakes shall be driven until the tops are flush with the outer profile of the Type K railing.
- Type K railing placed on bridges within 0.6 m of the edge of the deck shall be secured to the deck by means of dowels as specified in the Standard Plans.

When a staked rail is close to the edge of an excavation, the stakes on the traffic side of the rail will bear the majority of the lateral load during an impact. The rail in turn will bear this stake load only if there is adequate steel reinforcement between the stake hole and the outside edge of the rail. Consequently, good quality controls, and quality assurance, is absolutely essential for rail fabrication.

To prevent excessive lateral deflection during impacts in the vicinity of the upstream or downstream ends of a Type K railing installation, one of the following measures shall be taken:

- (a) place at least two segments at each end of the installation a minimum of 4.6 m from the edge of traveled way (ETW) or in a protected area where they cannot be struck by errant vehicles, or
- (b) stake one segment at each end of the installation.

If the upstream end of a Type K railing installation is less than 4.6 m from the ETW and is not in a protected area (e.g., behind a guardrail or other substantial feature), the blunt end shall be protected by means of an approved sand barrel array or other crash cushion attenuator. Engineering judgement needs to be used in determining how a Type K railing installation is positioned and terminated. For example, if the blunt upstream end of such an installation is more than 4.6 m from the ETW but terminates in close proximity to another barrier or wall, that blunt end should be protected.

Unique circumstances, site conditions or installation constraints pertaining to Type K railing may justify exceptions to this policy. **Requests for exceptions shall be submitted to the Division of Traffic Operations through the Traffic Reviewers.** This will ensure consistency throughout the state.

BACKGROUND

Previous policy on K-rail anchors was set forth in a February 11, 1993 memo from James Borden and John Apostolos. This policy updates, clarifies and supercedes that previous policy directive.

DEFINITIONS

Meanings of "Shall," "Should," and "May"

To clarify the meanings intended in this Program Directive by the use of these words, the following definitions apply:

- 1) **SHALL** – A mandatory requirement. Mandatory requirements are those considered most essential to achievement of overall objectives of this Program Directive. Mandatory requirements use the word "shall" and are printed in **Boldface** type.
- 2) **SHOULD** – An advisory requirement. Advisory requirements are important also, but allow greater flexibility in application to accommodate varying conditions. Advisory requirements use the word "should"

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and are indicated by Underlining.

3) MAY – A permissive requirement. Permissive requirements use the word "may" and indicate that no requirement for application is intended.