TEMPORARY RAILING

The sloping terminal panel is no longer an acceptable end-treatment for installations of Temporary Railing (Type K).

Designers will use Temporary Railing (Type K), also referred to as "K-rail", according to the following guidelines:

1. At Falsework Openings

The Standard Specifications require the installation of K-rail on both sides of vehicular openings through falsework or whenever falsework will be within 12 feet of the edge of a traffic lane. (See the Project Preliminary Report for falsework opening requirements.)

An item for Temporary Railing (Type K) and for Temporary Crash Cushions shall be included in General Plan and Blue Sheet estimates whenever the above conditions are met. The estimated length for Temporary Railing (Type K) will be based on the width of the structure plus 150 feet of approach K-rail arranged at 10:1 taper on the approach end, and 60 feet on the trailing end for two way traffic (Figure 1). Assume a 12-module crash-cushion array per installation for the Temporary Crash Cushion quantity.

Do not detail K-rail or temporary crash-cushion layout for the falsework openings on the bridge plans. Insert a copy of the sheet entitled "Temporary Crash Cushion, Sand Filled" (Figure 5), into the bridge plans. A full-size reproducible copy of this sheet is available from the Bridge Railing Staff Specialist. This sheet is not to be altered except for the addition of the contract number, the page number, and district/county/route designation.

2. Bridge Widenings or Barrier Upgrades

Whenever possible, use the existing bridge railing for barrier purposes during construction.

When existing bridge railing or bridge approach guard railing is to be removed prior to construction, K-rail shall be shown on the plans.

The layout of K-rail may be placed on the General Plan sheet, or on another sheet as a separate detail. The K-rail shall be placed such that the ends of the barrier extend beyond the bridge ends. On the traffic approach side, provide a minimum of 150 feet of barrier at a 10:1 taper (Figure 2).

If the designer determines that the roadway geometry or lack of available space prohibits such a taper, the District must be contacted to recommend an appropriate K-railing and/or temporary crash cushion layout. If no recommendations from the District are available at the Planning or General Plan stage, assume a minimum of 150 feet of approach K-rail for estimating purposes.

Supersedes Memo to Designers 14-19 dated May 1989

If the Structures and District designers have agreed upon the need for a temporary crash cushion, show the crash cushion and K-rail layout on the General Plan or on another sheet as a separate detail. The K-rail approach may be shortened as necessary (maintain a 10:1 taper).

It may be appropriate for the District to take the responsibility for the crash cushion, and all or part of the K-rail quantity. This may be the case if site conditions at the approaches are unknown, construction staging requires the K-rail to be moved frequently, or if the project has many structure sites (such as bridge railing upgrade or approach slab projects). Denote the portion of K-rail to be estimated by Structures and refer to road plans for crash cushion details (Figure 3). Variations of this procedure are permissible, but, as in all cases, the project engineer must coordinate traffic control details with the District.

3. Other Considerations

Quantity estimates for K-rail shall be in multiples of 20 feet.

On two-way secondary roads without a median, the trailing end K-rail should be treated as the 60 foot taper for falsework (Figure 1) with a 12 module crash cushion array.

Traffic delineation shall not be shown on bridge plans. All traffic controls, other than K-rail on a bridge deck, shall be detailed on the road plans. Timber barricades are not to be used in highway construction.

Keep in mind that K-rail deflects and is displaced when subjected to vehicular impact. When laying out K-rail, allow for such deflections by providing approximately two feet clear from the K-rail to a drop-off. If less than two feet is available, attach the K-rail to the bridge deck (Figure 4).

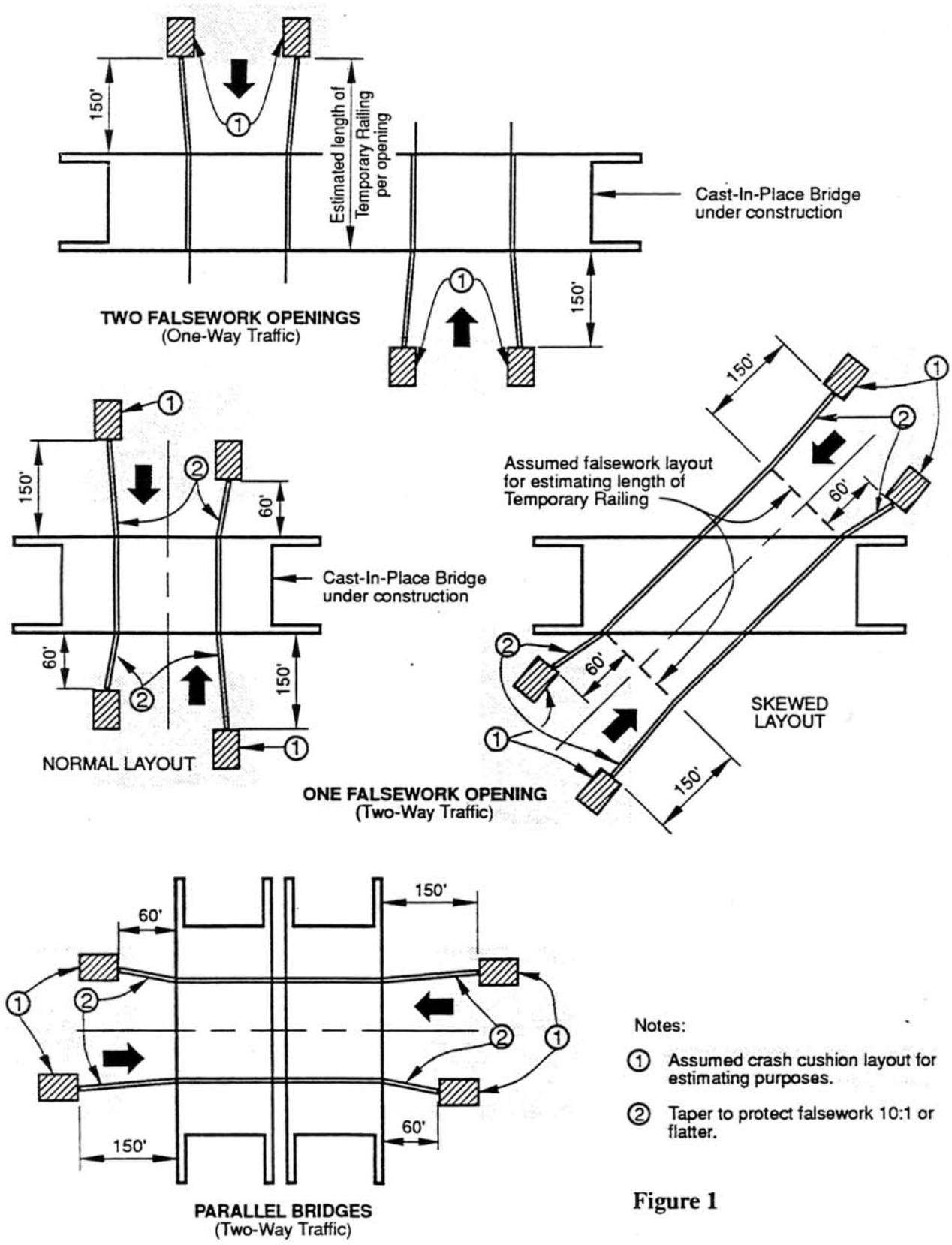
Temporary crash cushions may consist of the Construction Zone (CZ) GREAT if lateral space is limited, or if specifically requested by the District. See Memo to Designers 14-14 for additional information.

The Standard Specifications and the Special Provisions may cite other situations which require installation of K-rail between a lane carrying public traffic and the contractor's operations. In general, this K-rail may be the contractor's responsibility and payment should be included in other items of work if not required to be shown on the plans.

R T Balon
for Floyd L. Mellon

Guy D. Mancarti
Guy D. Mancarti

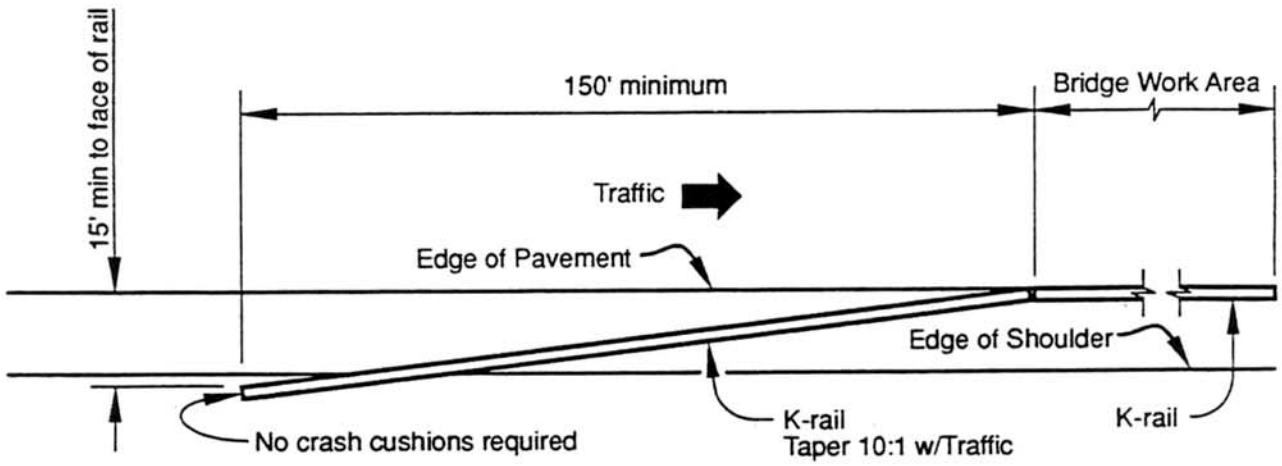
JPH:jgf
Attachments



Notes:

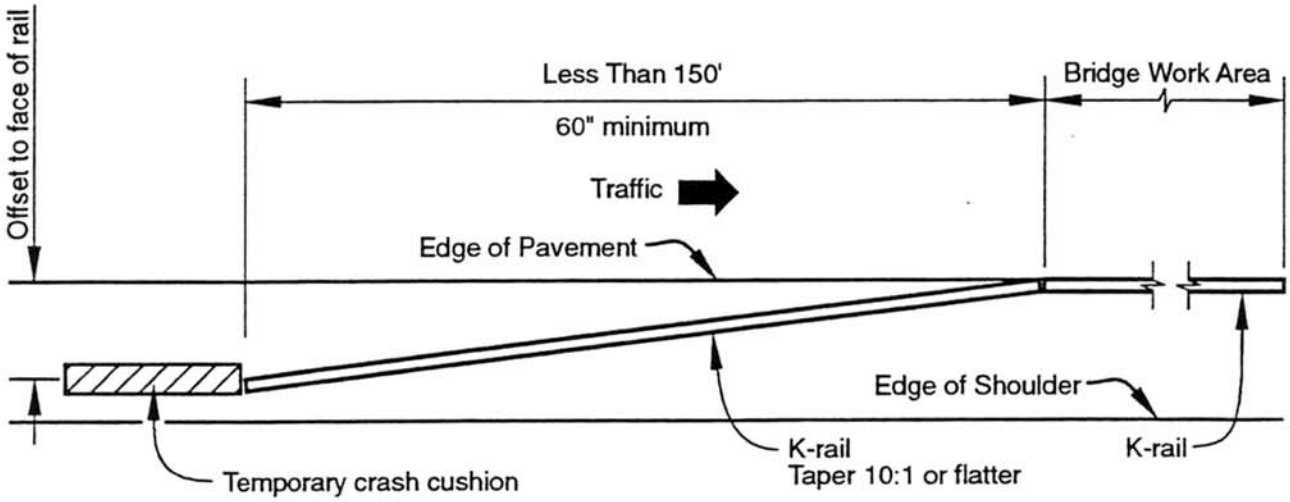
1. Assumed crash cushion layout for estimating purposes.
2. Taper to protect falsework 10:1 or flatter.

Figure 1

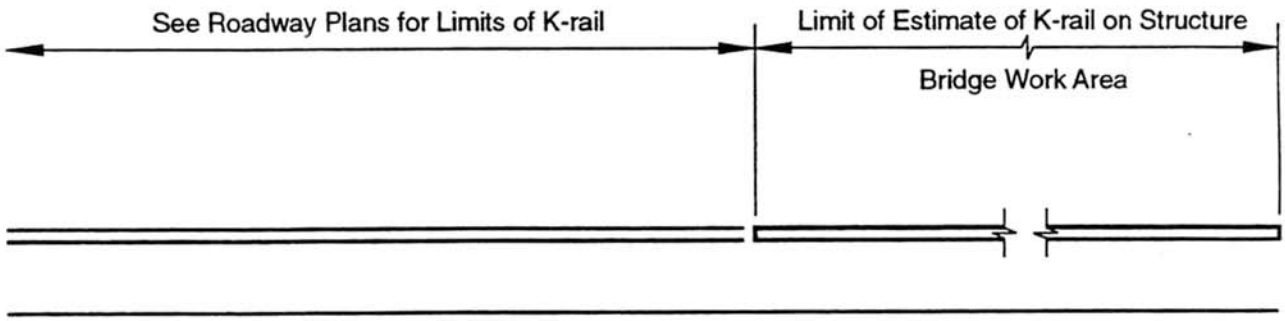


NO CRASH CUSHIONS REQUIRED

Figure 2

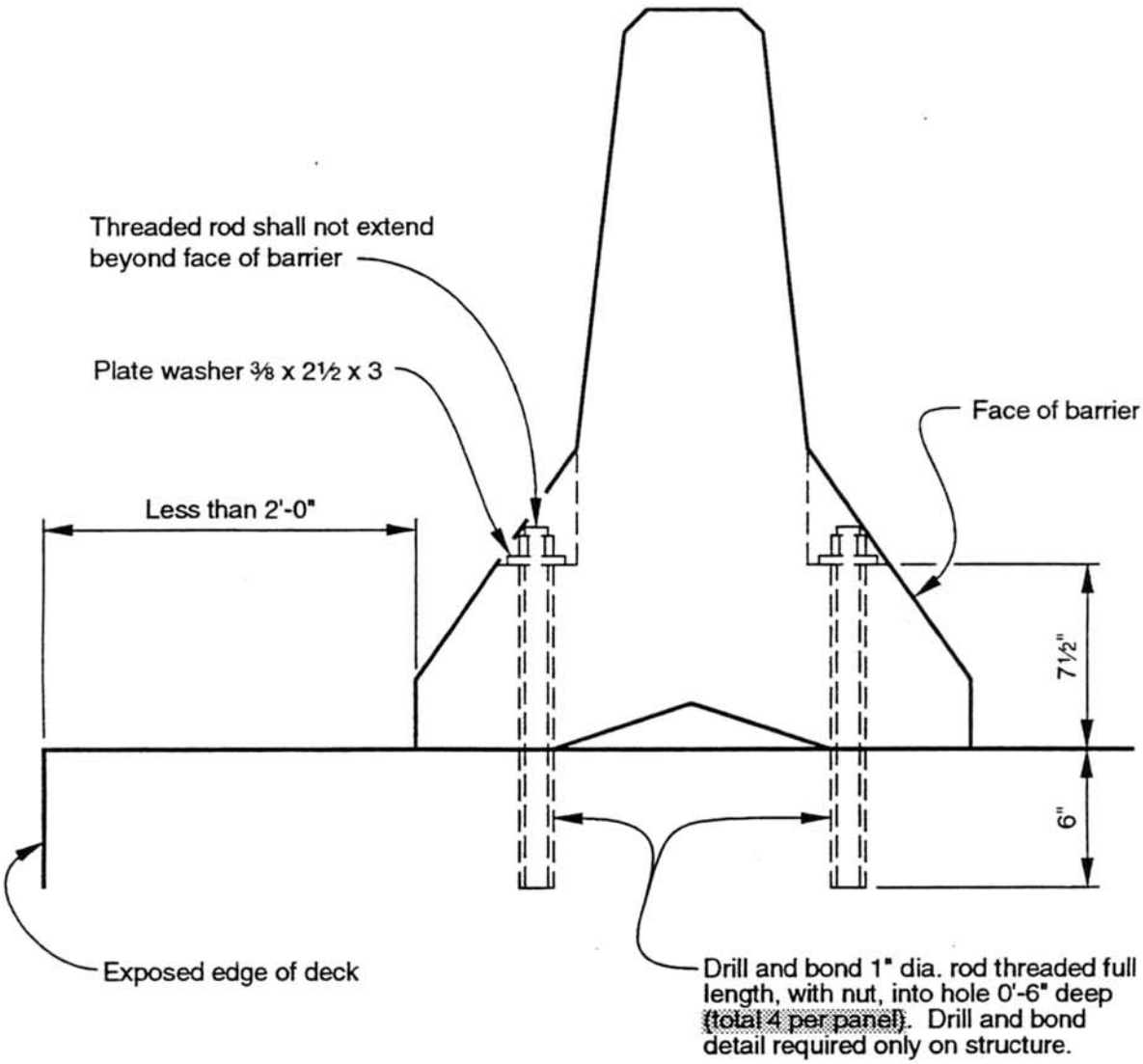


TEMPORARY CRASH CUSHION REQUIRED



EXAMPLE OF ESTIMATE SHARED WITH DISTRICT

Figure 3



TYPE K RAILING ATTACHMENT DETAILS

See "Temporary Railing (Type K)" for details not shown

Figure 4