

IOWA DEPARTMENT OF TRANSPORTATION

To Office: Bridges & Structures

Date: August 27, 2002

Attention: All Employees

Ref. No.: 521.2

From: Gary Novey

Office: Bridges and Structures

Subject: MM No. 66 Guidelines for Using Standard Prestressed Concrete Beams

With the development of the new bulb tee (BTC & BTB) sections, there have been numerous requests to use them. However, until we have had a chance to fabricate and use the sections in some of our projects, we would like to limit their use.

Therefore, continue to use the current standard sections (A, B, C, D and BT 72 inch (1800 mm)) until further notice, unless the following situations apply.

1. For structures with spans of 120 ft. (36 500 mm) and less, where the standard D beam cannot be used because of vertical clearance issues, the BTC, 45-inch section (1143 mm) may be used with approval from Gary Novey.
2. For structures with spans greater than 120 ft. (36 500 mm) where the standard BT cannot be used because of vertical clearance issues, then the BTB, 54-inch section (1370 mm) may be used with approval from Gary Novey.
3. Overpass locations where the new two span prestressed standards can be used. The two span standards use the new BTC and BTB section.

Vertical clearance issues can be defined as occurring when substantial cost increases are incurred with the grade raise necessary to accommodate the standard "D" or "BT" beam. For Office Relocation work (newly proposed roadway), profile grade adjustments are considered part of the plan development process and therefore not considered an issue.

When considering the use of the new bulb tees, take into account the geometrics of the roadway and bridge. On horizontal curves or transitions into horizontal curves, the haunch-thickening details for prestressed beams are complicated because of super elevations or super elevation transitions on the bridge deck. With the large top flanges (4 ft., 1218 mm wide) of the new sections, the additional loads from excessive haunch thickness may make the section uneconomical or require the beams to be redesigned. The new bulb tees may not be the best choice in these situations.

DGB:jw