The following pages of *Bridge Design Aids*, Section 8, have been reviewed in December 1989 and found to be valid and appropriate for continued use:

<table>
<thead>
<tr>
<th>Page</th>
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<th>Title</th>
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</thead>
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<tr>
<td>8-1 thru 8-9</td>
<td>May 1962</td>
<td>Influence Lines for Moment (3 Span with ¾ end spans)</td>
</tr>
<tr>
<td>8-10 thru 8-20</td>
<td>May 1962</td>
<td>Influence Lines for Moment (4 Span with ¾ end spans)</td>
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<td>8-21 thru 8-32</td>
<td>May 1962</td>
<td>Influence Lines for Moment (5 Span with ¾ end spans)</td>
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<td>8-35 thru 8-43</td>
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<td>8-45 thru 8-47</td>
<td>May 1963</td>
<td>Design Charts – Moment envelopes</td>
</tr>
</tbody>
</table>

These pages will be updated when appropriate.

Floyd L. Mellon

Guy D. Mancari

SLM:jmm
INFLUENCE LINES FOR MOMENT
4 CONTINUOUS SPANS - SUPPORTED ENDS
UNIFORM I

\[ W = \text{Uniform load per unit of length} \]
\[ \text{Moment} = \text{Coefficient} \times I \]

Spans unity - Loads unity

4 SPAN TOTAL = \(-0.0866 \, WL^2\)
MOMENT OVER SUPPORT 3

4 SPAN TOTAL = \(-0.0789 \, WL^2\)
MOMENT OVER SUPPORT 2
INFLUENCE LINES FOR MOMENT
5 CONTINUOUS SPANS - SUPPORTED ENDS
UNIFORM I

W = Uniform load per unit of length
Moment = Coefficient x L
Spans unity - Loads unity

5 SPAN TOTAL: 0.773 WL²
MOMENT OVER SUPPORT 2

5 SPAN TOTAL: 0.746 WL²
MOMENT OVER SUPPORT 3
<table>
<thead>
<tr>
<th>Size (in mm)</th>
<th>0-5000</th>
<th>0-7000</th>
<th>0-9000</th>
<th>0-11000</th>
<th>0-13000</th>
<th>0-15000</th>
<th>0-17000</th>
<th>0-19000</th>
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</table>

**Diagram:**
- The diagram shows a graph with various lines and annotations indicating different sizes and weights.
- Key values and annotations are marked on the graph for reference.
- Specific sections are labeled with numbers (e.g., 4, 5, 2).
- Units used include millimeters (mm) and pounds (lb).
Influence line for four equal spans supported ends

Moment at 0

\[ M_0 = \text{Coeff} \times P \]

Span's unit - loads unit

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4 Span Total = +0.0729 W\(\text{l}^2\)

-0.0040 W\(\text{l}^2\)

-0.0004 W\(\text{l}^2\)

-0.017 W\(\text{l}^2\)

-0.0417 W\(\text{l}^2\)

0.0849 W\(\text{l}^2\)

0.0188 W\(\text{l}^2\)

0.0510 W\(\text{l}^2\)

0.1020 W\(\text{l}^2\)

0.1881 W\(\text{l}^2\)

0.349 W\(\text{l}^2\)
NOTES: Use for Continuous Structures with approximately equal spans, or adjacent to 3/4 length simply supported and span.

Ratio of \( \frac{\text{DL Moment}}{\text{LL} + \text{I Moment}} \) shown thus: (1.0)

AASHO 1944, and subsequent revisions.

LL H20-S16-44

USE OF CHART: Calculate max. negative DL+LL+IM at support by conventional methods. Call this total 100%. Find ratio \( \frac{\text{DLM}}{\text{LL} + \text{IM}} \) using max. M values at support. To find max. neg. M at other points in span, read % from proper ratio curve and multiply max. neg. M at support by this %. Calculate max. positive DL+LL+I M at \( \epsilon \) span, and continue as above, referring all values to \( \epsilon \) span.

DESIGN CHART

ENVELOPE CURVES FOR MOMENT-INTERIOR
SPAN - UNIFORM MOM. OF INERTIA
This chart can be used for any structure of 3 continuous spans of uniform moment of inertia. In a structure having columns fixed with the deck the negative moment curves will change from the values indicated. For "Use of Chart" see Design Chart on Interior Span.
This chart can be used for a 2 span continuous structure in which the ends and center are simply supported. It may be used for a structure in which the center bent is fixed with the girders, however bar lengths will be slightly longer than required.

SOLID LINES —— 50' spans
DASHED LINES —— 100' spans

<table>
<thead>
<tr>
<th>Ratio of</th>
<th>DL Moment</th>
<th>shown thus:</th>
</tr>
</thead>
<tbody>
<tr>
<td>LL+I Moment</td>
<td>1.0</td>
<td></td>
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</table>