1. **DESCRIPTION:**

1.01 Work shall consist of furnishing and installing a linear delineation system on temporary concrete barrier in accordance with the contract documents.

2. **MATERIALS:**

2.01 **General Requirements.** The system shall consist of segmented panels attached to temporary concrete barrier segments.

A. Each panel shall be 34 inches long by 6 inches wide.

B. Each panel shall be constructed of retroreflective material permanently bonded to an aluminum substrate. The panels shall have a repeating raised lateral ridge approximately every 2½ inches, 1/3 inch in height, with a 45-degree profile.

2.02 **Color.**

A. Conformance to the daytime color requirements shall be determined from measurement of the retroreflective sheeting applied to aluminum test panels. Daytime color shall be measured instrumentally using a spectrophotometer employing annular 45/0 (or equivalent 0/45) illuminating and viewing geometry.

B. Color measurements shall be made in accordance with ASTM E1164 for white and ASTM E2153 for fluorescent yellow. Chromaticity coordinates shall be calculated for CIE Illuminant D65 and the CIE 1931 (2o) Standard Colorimetric Observer in accordance with ASTM E308 for white and ASTM E2152 for fluorescent yellow.

C. Chromaticity limits for white:

<table>
<thead>
<tr>
<th></th>
<th>x</th>
<th>y</th>
<th>x</th>
<th>y</th>
<th>x</th>
<th>y</th>
<th>Limit Y (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>0.303</td>
<td>0.287</td>
<td>0.368</td>
<td>0.353</td>
<td>0.340</td>
<td>0.380</td>
<td>0.274</td>
</tr>
</tbody>
</table>

D. Chromaticity limits for fluorescent yellow:

<table>
<thead>
<tr>
<th></th>
<th>x</th>
<th>y</th>
<th>x</th>
<th>y</th>
<th>x</th>
<th>y</th>
<th>Fluorescence Luminance Factor YF (%)</th>
<th>Total Luminance Factor YT (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluorescent Yellow</td>
<td>0.521</td>
<td>0.424</td>
<td>0.557</td>
<td>0.442</td>
<td>0.479</td>
<td>0.520</td>
<td>0.454</td>
<td>0.491</td>
</tr>
</tbody>
</table>

2.02 **Anchoring Materials.** Polymer anchoring materials shall be provided in accordance with Section 701-07 Anchoring Materials – Chemically Curing.

2.04 **Connections.** Mechanical fasteners shall be provided in accordance with Section 715-16 Stainless Steel Connecting Products.

2.05 **Adhesive.** An adhesive caulking system such as 3M Window-Weld Super Fast Urethane (#08609), or approved equal, shall supplement mechanical anchorage in all installations.
3. CONSTRUCTION DETAILS:

3.01 Materials shall be installed on temporary concrete barrier segments in accordance with the manufacturer’s recommendations. Mechanical anchorage shall be provided in accordance with Section 586-3.01 and Section 586-3.03.

3.02 Panels shall be attached 6 inches below the top of the temporary concrete barrier segment and spaced 86 inches apart. Gaps between panels may be adjusted as directed by the Engineer for temporary concrete barrier segments that are not 20 feet in length.

3.03 Panels shall be attached on all temporary concrete barrier segments tangent to the traveled way: white shall be displayed on the right and fluorescent yellow shall be displayed on the left.

3.04 Temporary concrete barrier segments in narrow medians shall have fluorescent yellow panels on both sides of the barrier.

3.05 The Contractor shall be responsible for maintaining the panels. Any materials that fail shall be immediately replaced as directed by the Engineer.

3.02 Temporary concrete barrier installed at the Contractor’s option, or required solely by a delay in the Contractor’s operations, shall be provided with a linear delineation system.

4. METHOD OF MEASUREMENT:

4.01 Linear delineation system will be measured as the number of linear feet satisfactorily installed on temporary concrete barrier. No measurement will be made for the number of linear feet of gaps between delineation panels.

5. BASIS OF PAYMENT:

5.01 The unit price shall include the cost of furnishing all labor, materials, and equipment necessary to satisfactorily complete the work.

5.02 Payment will be made for the length of Linear Delineation System installed upon satisfactory installation of temporary concrete barrier.

5.03 Payment for this item will only be allowed once in this contract for each temporary concrete barrier unit. No payment will be made for a subsequent movement of the barrier unit unless a different color is required.

5.04 No payment will be made for the linear delineation system on temporary concrete barrier installed at the Contractor’s option, or required solely by a delay in the Contractor’s operations.