Index 521-600 Series Concrete Barrier /Junction Slabs - Wall Copings

Design Criteria

AASHTO LRFD Bridge Design Specifications; ***Structures Design Guidelines (SDG)***; ***NCHRP Report 663***, Design of Roadside Barrier Systems Placed on MSE Retaining Walls

A combination MSE wall mounted, precast coping / cast-in-place barrier similar to the design included throughout this standard series was successfully crash tested at Terre Armee International (France). See report "Field Test of a "GBA" Safety Barrier Erected on a Reinforced Earth Wall", May, 1982.

The details on Index 521-610, 521-611 and 521-620 are generally applicable for a TL-4 crash test rating with the 36" single-slope concrete barriers, and for a TL-5 crash test rating with the 42" single-slope barriers.

Reinforcing cover for Concrete Barriers with carbon steel reinforcing is shown as 2½ " for cast in place construction, which accommodates slip forming tolerances. For modified designs 2" minimum cover is usually adequate for stationary form and precast construction. Cover for Concrete Barriers with FRP reinforcing has a cover of 2” for C-I-P which accommodates slip forming and may be reduced to 1½” for precast sections.

Design Assumptions and Limitations

This Index Series provides recommended details of various conditions typically encountered at the interface of retaining walls and other components. Work this Index with project specific details for End Bents, drainage structures and other adjacent features, structures or components.

Plan Content Requirements

In the Structures or Roadway Plans:

Show details and/or cross-sections as required in the Plans. Include cross references to traffic/pedestrian railings heights and shapes, but do not reference the traffic/pedestrian railing Index numbers.

Commentary: Standard bridge traffic railings, when installed on junction slabs require modification to the reinforcement; therefore, do not include a reference to the associated traffic railing Index number, but instead, reference the Standard Plans for the concrete barrier/ junction slab combinations within the Index 521-600 Series. These Standard Plans show the appropriate cross references to the bridge traffic railings and details for the modified reinforcing steel.

Although the reinforcement for the Index 521-820 pedestrian railing is similar to that shown within Index 521-630, in order to allow for the precast option include a reference to Index 521-630 only.

In the Roadway Plans:

When using Index 521-610 or 521-611 with asphalt pavement, show shoulder, roadway pavement and Type SP overbuild. Variable thickness asphalt below finish course is paid for as overbuild.

Payment

Commentary: *For consistency, Conduit and EJB's are no longer included in the cost of the Traffic Railing.*

Item number	Item Description	Unit Measure
521-6-AB	Concrete Parapet	LF
521-8-11	Concrete Barrier /Noise Wall - - with Junction Slab 8'-0"	LF
521-8-AA	Concrete Barrier, with Junction Slab	LF
630-2-16	Conduit, Furnish & Install, Embedded	LF
635-3-13	Junction Box, Furnish & Install, Embedded	EA