

## Section 16 – BARRIER RAILS – Type 60P, Type 60PR, and Type 60AP

<b>XS Sheet Numbers</b>	xs16-075, xs16-076, xs16-77
<b>Description of Component</b>	<p>Use for small single sheet aluminum sign panel within a length of</p> <ul style="list-style-type: none"> <li>• new type 60 barrier on top of soil or standard fill</li> <li>• existing type 60 barrier on top of soil or standard fill</li> <li>• existing type 60A barrier on existing reinforced slab on grade.</li> </ul> <p>Use inside or outside of Special Wind Regions. Use inside or outside of Ice Regions.</p>
<b>Standard Drawing Features</b>	<p>Use xs16-075 where new type 60P barrier is being installed along with new type 60 barrier on soil or standard fill.</p> <p>Use xs16-076 where new type 60PR barrier is replacing a section of existing type 60 barrier on soil or standard fill.</p> <p>Use xs16-077 where new type 60AP barrier is replacing a section of existing type 60A barrier on existing reinforced slab on grade.</p>
<b>Design/General Notes</b>	<p>Single sheet aluminum sign panels up to 4' wide are supported structurally, but such wide widths might not always be acceptable geometrically. Sign panel(s) to be centered horizontally on post. Sign panels allowed on both sides of post.</p> <p>Structural Design Notes:</p> <ul style="list-style-type: none"> <li>• AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 5th Edition.</li> <li>• V=100 mph, Kz=0.87, no topographic effects, G=1.14, Ir=1.0 (“Design Life” = 50 year), Cv=1.0, sign panel Cd = 1.19, post Cd = 1.1, barrier Cd = 1.3.</li> <li>• Ice Load included.</li> <li>• Fatigue design not required.</li> <li>• Post Fy = 35 ksi min</li> <li>• Rebar Fy=40 ksi min</li> </ul>
<b>Additional Drawings Needed to Complete PS&amp;E</b>	Roadway plans showing sign locations, orientation, size, vertical heights, and messages.

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<p><b>Contract Specifications</b></p>	<ul style="list-style-type: none"> <li>• Standard Specifications.</li> <li>• NSSP (if not available from the Branch Chief of the Traffic Safety Devices Branch - Office of Traffic Safety Program, then contact the Senior Technical Specialist for Signs and Overhead Structures)</li> </ul>
<p><b>Restrictions on Use of Standard Drawings</b></p>	<p>Special designs are needed for:</p> <ul style="list-style-type: none"> <li>• Locations where finish grade at barrier is more than 33' above surrounding terrain</li> <li>• Located at barriers other than noted above</li> <li>• Skews greater than 45 deg</li> <li>• Dimensions outside of limitations shown below (60P shown, 60PR, and 60AP have the same restrictions).</li> </ul> <div style="text-align: center;"> </div>
<p><b>Special Considerations</b></p>	<p>For these xs-sheets (using 4NPS XS post or smaller), the 56" minimum barrier height often required at bridge columns, overhead sign posts, etc, does not apply and 48" is required instead. Customized designs that use stronger posts, larger signs, or have other significant deviations from these XS-sheets might be required to have increased barrier height and/or increased lateral clearance from the top edge of barrier to the sign post.</p>