

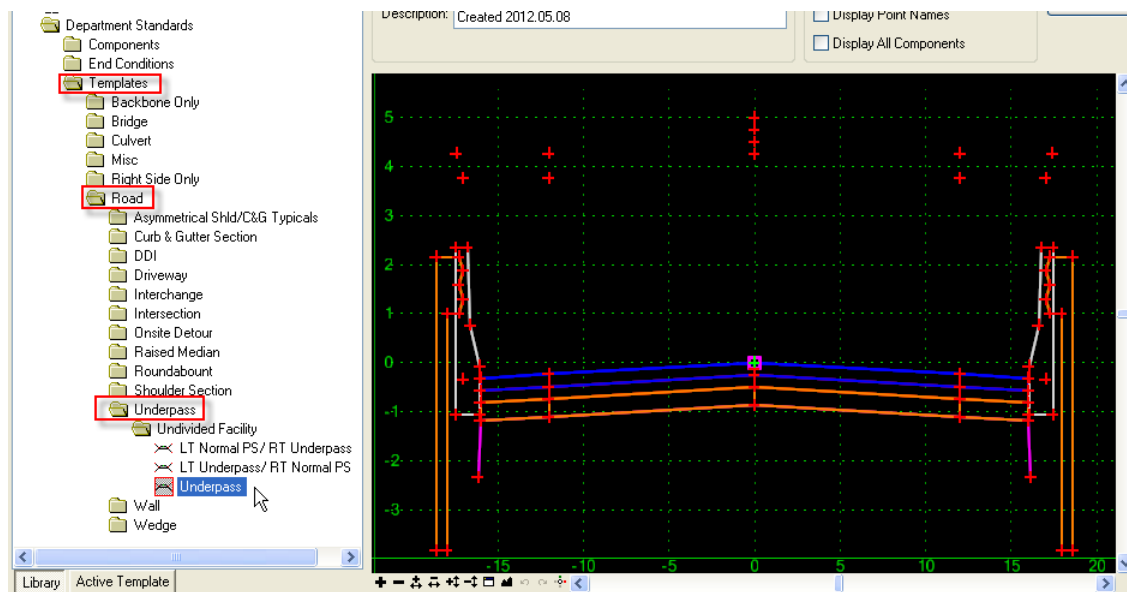
## 2\_1 NEW TEMPLATE – USING CONCRETE BARRIERS AT THE UNDERPASSES

### Question:

Is there a template using concrete barriers at the underpasses?

### Answer:

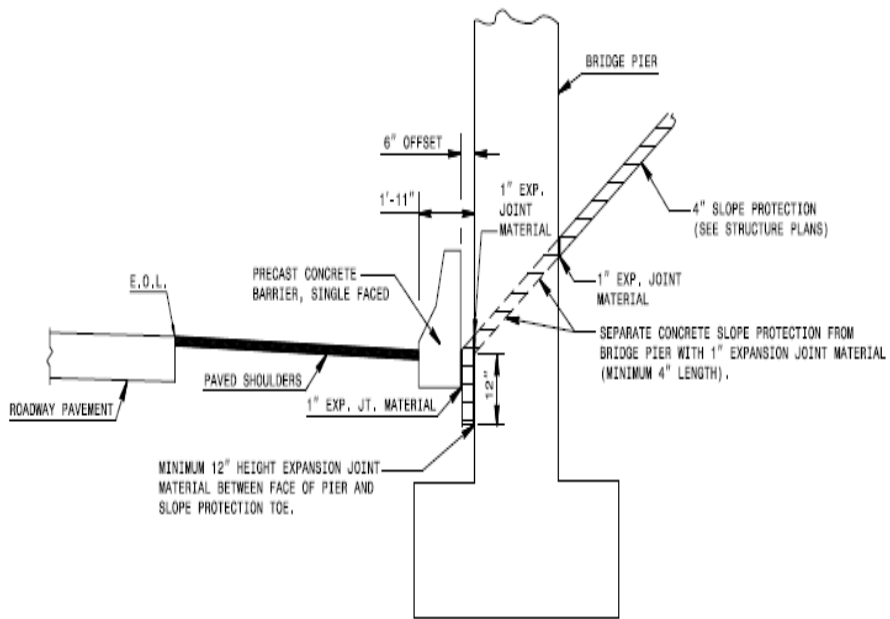
A set of templates has been created for underpasses.



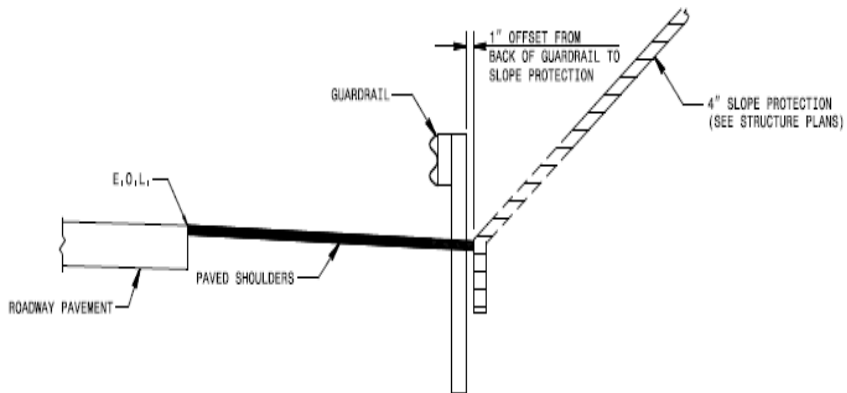
Based on The Roadway Standard Drawings 225.09 ( "Guide for Shoulder and Ditch Transition at Grade Separation") and 857.01 ( "Precast Reinforced Concrete Barrier- 41" Single Faced"), these new templates were designed to handle these three situations:

STD. 610.01 to 610.03 (Guide for Paving Shoulders Under Bridges)

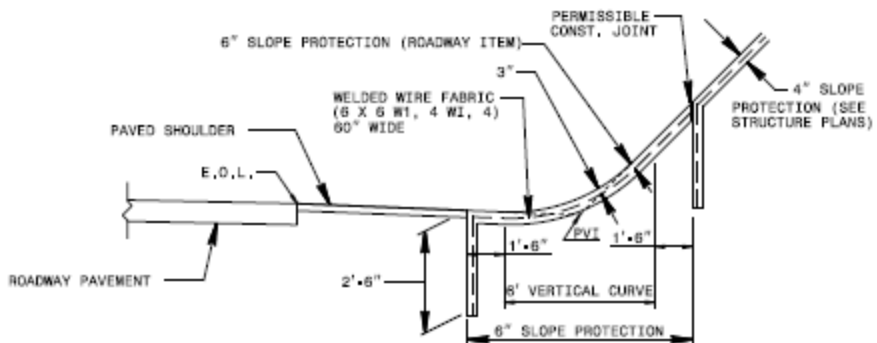
**Method I – Precast Concrete Barrier, Single Faced**



**Method II - Guardrail**

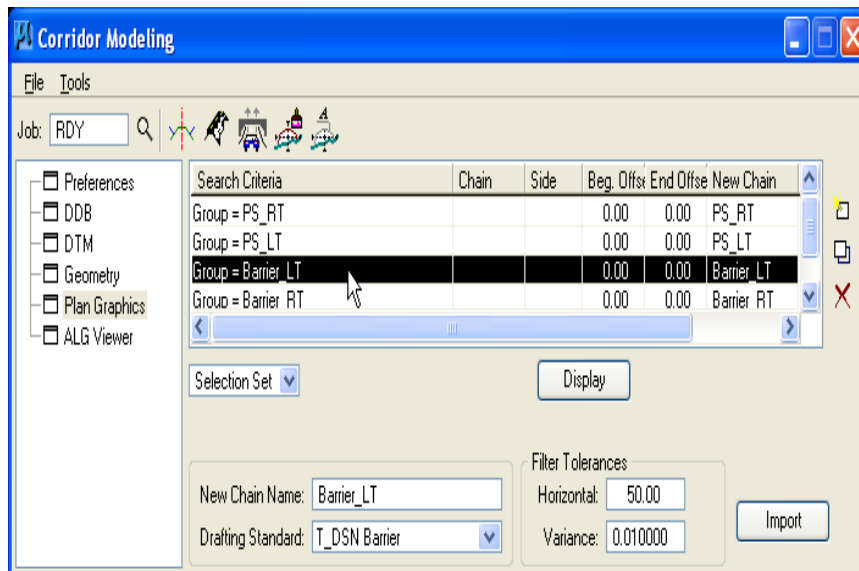
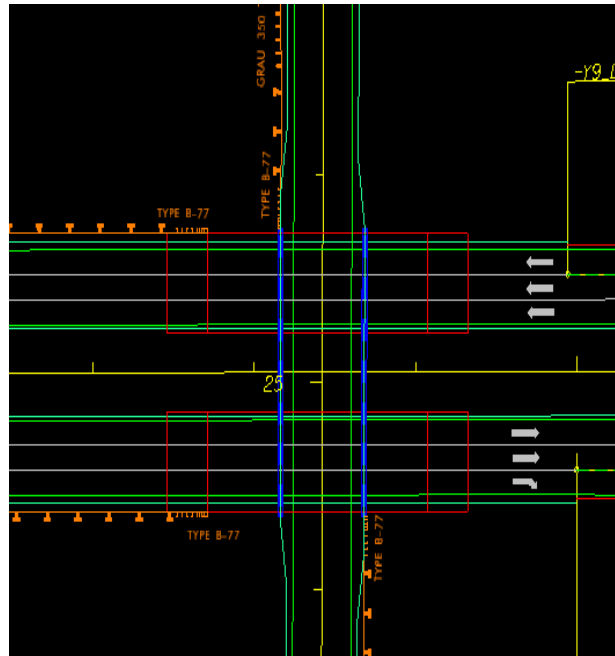


**Method III – 6' Vertical Curve**

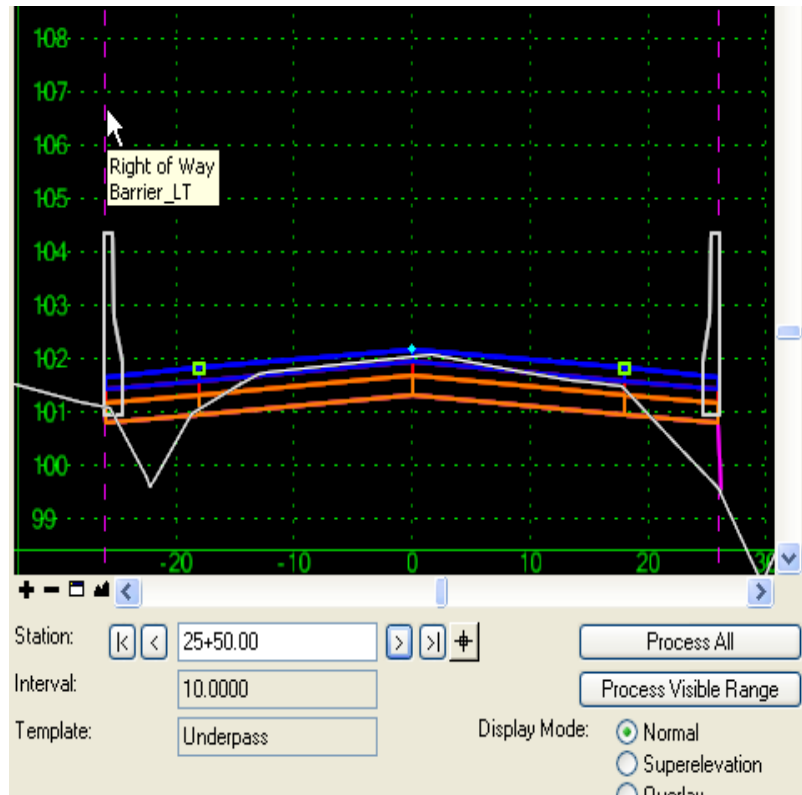


Note the template is sheared off where the toe of slope protection meets the paved shoulders. The subgrade line is then tied to the existing ground for cross section earthwork to compute properly. We will address end bents/bridge abutments and slope protection modeling with SS3.

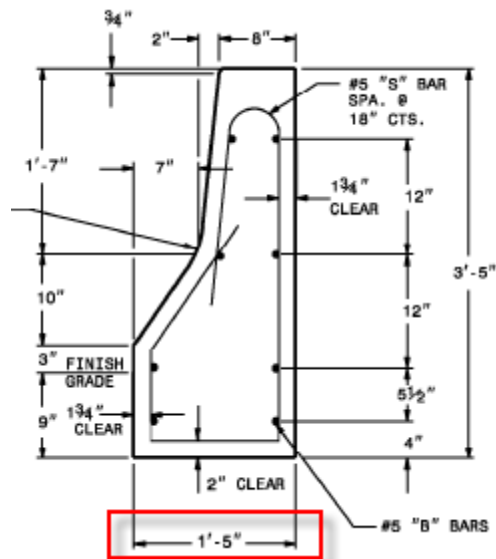
For a typical underpass, simply store the guardrail or concrete barrier as plan graphics. Paved shoulders are optional but highly recommended because of tapering at multiple locations.

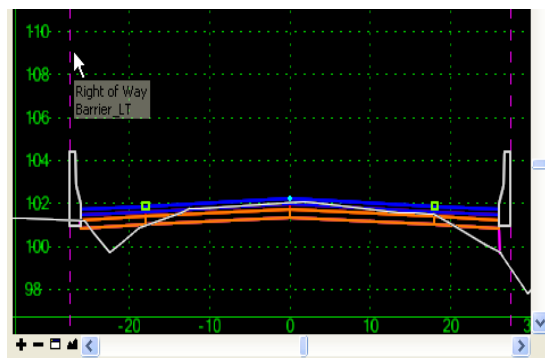
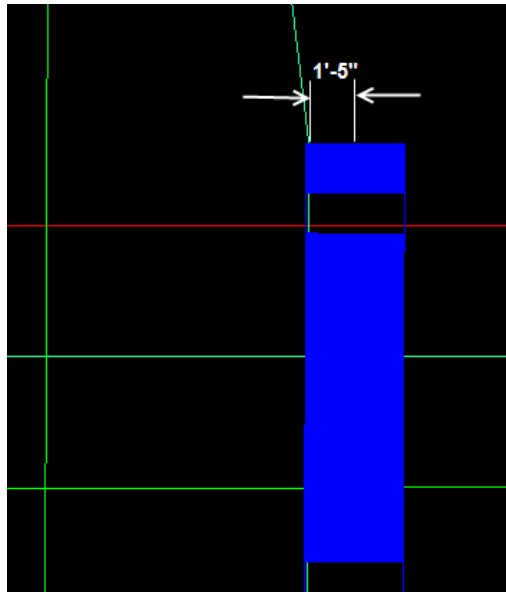


Note the location of the concrete barrier, guardrail, and edge of paved shoulder can be independent of each other. They depend on how they were drawn as plan graphics.



However, to represent the concrete barrier exactly as drawn in Method 1, the graphics must be drawn and stored at an offset of 1.4167' (1'-5" width of barrier base) outside from the edge of paved shoulder line.





The guardrail location for Method II should be 1.6874' (width of guardrail + 1") inside from the edge of paved should line.