

## 2\_40 BRIDGE METAL RAILS

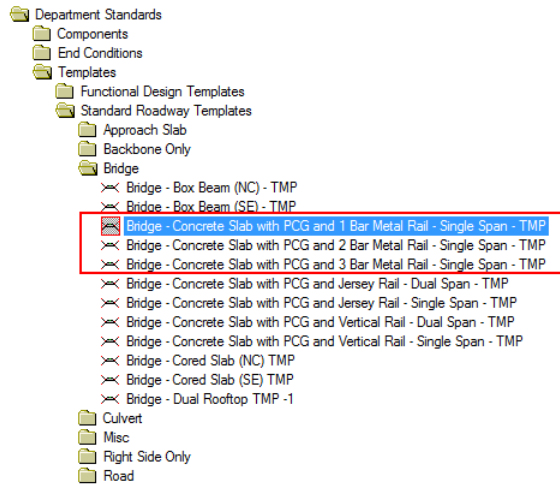
### Question:

I would like to model a 3 Bar Metal rail on my bridge.

### Answer:

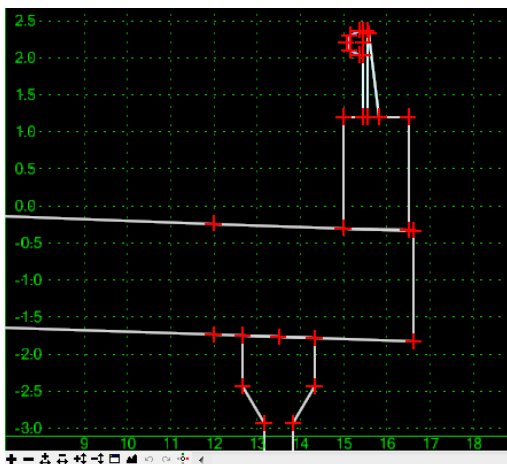
Along with the new New Jersey and Vertical (aka "flat-faced") Concrete Barrier Bridge Rail Components, three more options are available for NCDOT Corridor Modeling projects"

- 1 Bar Bridge Metal Rail
- 2 Bar Bridge Metal Rail (Bike Rail)
- 3 Bar Bridge Metal Rail (Sidewalk)

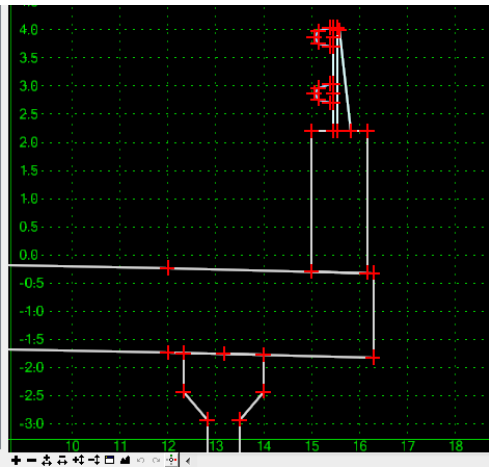


### 1 Bar Bridge Metal Rail

"One Bar Metal Rail is limited to routes that are not on the National Highway System (NHS), have a design speed of 45 MPH or below, and a limited volume of truck traffic is expected."



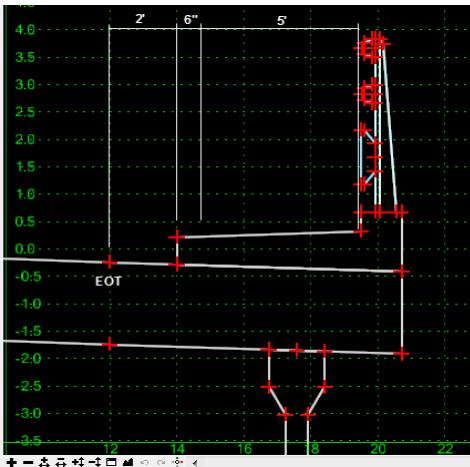
**2 Bar Bridge Metal Rail (Bike Rail)** - \*Note- a minimum handrail height of 54" is required and has been met. "Except as allowed in the Sub-Regional Tier Guidelines, Two Bar Metal Rails are used on structures carrying bicycle routes. When the rail is used on a bicycle route, requirements of the North Carolina Bicycle Facilities Planning and Design Guidelines shall be satisfied."



**3 Bar Bridge Metal Rail (Sidewalk) - \*Note-** a minimum handrail height of 42" is required and has been met.

*"Three Bar Metal Rails are used for structures with sidewalks."*

Also note the 2' from EOT, 6", and 5' offsets to the concrete parapet coincide with roadway features (2' gutter, 6" curb, and 5' sidewalk). These three features should be maintained/matched in a managed corridor from a roadway template, to an approach slab template, and a bridge template.



To complete our basic bridge superstructure components development, I will begin working on the steel beam/girder options next. Not only do these components (Prestressed Concrete Girders – PCG & Steel Beam - SB) give you the ability to visualize the superstructure type in the 3D model, these components have an important role in the future in determining vertical clearance, span length, sight distance, and clash detection analysis.

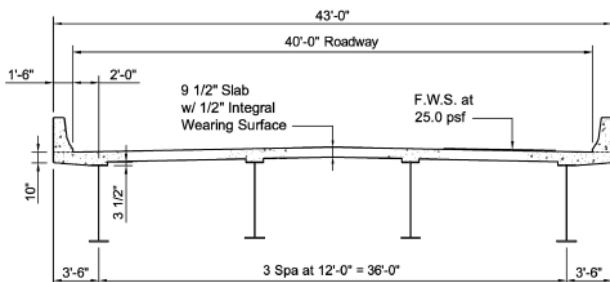


Figure 1: Typical Bridge Cross-Section