

LS 600s Local Systems

(This section last updated xx-xx-xx)



Do not use [LS series](#) standards on Interstate or Primary highways. LS series standards are for use on local systems roadways only. Use [BA series](#) standards on Interstate and Primary highways.

Refer to I.M. [3.230](#) for use of barriers on local systems roadways. The designer guidance provided in Section [8C-2](#) also applies for local systems roadways, with the following substitutions:

- [LS-625](#) can be used in place of [BA-205](#) and [LS-626](#) can be used in place of [BA-206](#).
- [LS-630](#) or [LS-635](#) can be used in place of [BA-250](#).
- [LS-631](#) can be used in place of [BA-251](#) and [LS-632](#) can be used in place of [BA-252](#).
- [LS-633](#) can be used in place of [BA-253](#).

The following is specific design information for the [LS-600 series](#):

The DOT uses the Midwest Guardrail System (MGS). Steel beam guardrail standards can be categorized by two general types:

- Component standards, which detail individual sections of guardrail that do not change from project to project (e.g. End Terminals or End Anchors). These standards are located in the LS-620s.
- Layout standards, which show how an overall guardrail installation is pieced together using the component standards (e.g. protecting a bridge end or protecting a railroad signal footing). These standards are located in the LS-630s.

End Terminals:

- [LS-625](#) is a tangent end terminal for all projects.
- [LS-626](#) is a flared end terminal. It may be used in locations where the need exists for an end terminal that is shorter or has a greater offset than the standard LS-625 end terminal. The LS-626 is also used where high-tension cable guardrail is connecting to steel beam guardrail, see the designer guidance for the [BA-300s](#). The SRT option for the LS-626 (see Guardrail Terminal Section (Local Systems) in [MAPLE](#)) is a gating terminal rather than an energy absorbing terminal like the LS-625. Vehicles that impact the end of the SRT may continue to travel behind the guardrail. Designers will need to ensure a recovery area (see Section [8C-2](#)) exists for vehicles that pass through the end terminal. If an energy absorbing terminal is desired, either the FLEAT or ET option will need to be specified.

Pay Lengths:

- Most guardrail items, such as the Barrier Transition Section and the End Terminal, are measured and paid for as “each” items. Remember:
 - The pay length for the Steel Beam Guardrail item is the length between the End Terminal and the Barrier Transition Section (or the End Anchor and the End Terminal). This length will be divisible by 12.5 feet. Refer to the guardrail layouts in the LS-630 series.
 - The current MicroStation cells for the barrier transition section and end terminals equal the length of the pay items.

The following is specific to the [LS-635](#):

This standard shows how several of the component standards are pieced together to provide a MASH TL-2 guardrail installation that attaches to a concrete barrier or bridge rail end section.

Steel Beam Guardrail Tangent End Terminal ([BA-225](#))

- A cell has been created for the dsnGuardrail.cel library: **MGS_VT_to BA-205_or BA-225**. This transition cell is placed immediately downstream of the end terminal, see Figure 1.

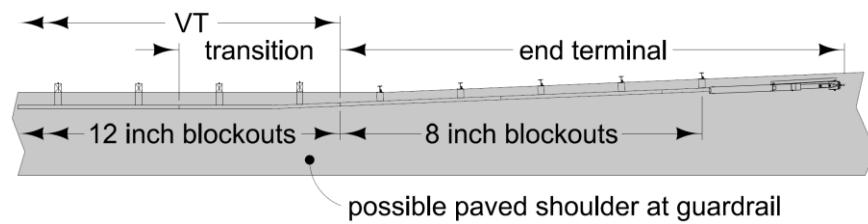


Figure 1: Transition for [LS-635](#).

- This cell serves two purposes:
 - To transition from variable tangent (VT) to BA-225.
 - To set up a pavement edge transition (in areas with paved shoulders) from the 12 inch blockouts of the VT to the 8 inch blockouts of the BA-225.

The transition is included in VT1, see Figure 2. The minimum length of VT1 is 37.5 feet. The minimum layout length for LS-635 is:

$$\text{BA-221 with BA-225} = 21'-10\frac{1}{2}" + 12'-6" + 3'-1\frac{1}{2}" + 35'-2" = 72'-8"$$

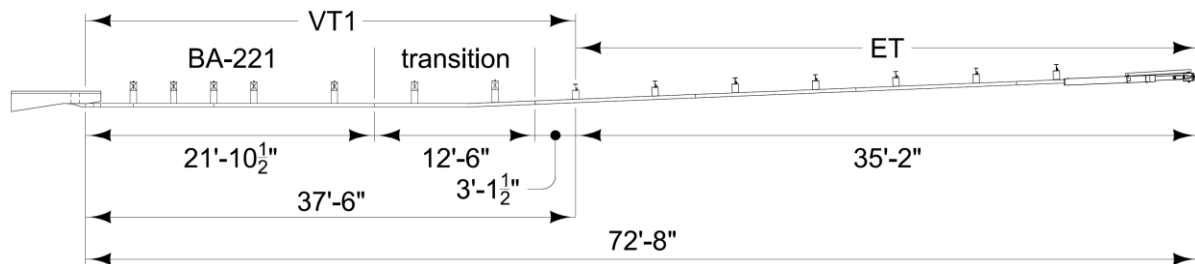


Figure 2: Layout lengths for [LS-635](#).

In order to limit the possibility of an impacting vehicle snagging on the concrete endpost, a 4 inch sloped curb is recommended underneath the guardrail in the area adjacent to the endpost. When used, the curb should start at the endpost and extend parallel to and outward from the endpost to at least the end of the BTS before transitioning to a no curb section, see Figure 3.

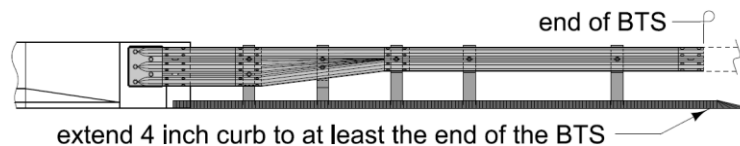


Figure 3: 4 inch sloped curb at BTS.