BA 300's High Tension Cable Guardrail at Bridges

(This section last updated 04-15-10)

Approach ends of bridges must always be protected, and this is usually accomplished with steel beam guardrail. This steel beam guardrail provides an attachment point for the termination of high tension cable. However, the cable connection requires a minimum length of 25 feet of w-beam guardrail installed on a tangent, not on a flare.

Since each high-tension cable guardrail manufacturer has their own method of attaching the cables to the guardrail, Methods does not maintain any details for the actual attachment.

For a bid item, use **2505-4020580 GUARDRAIL, SPECIAL ANCHOR SECTION**. This item, bid as each, covers a short section of high tension cable guardrail that ties into the steel beam guardrail – it does not cover any part of the steel beam guardrail installation. Note also that this item takes the place of one High Tension Cable Guardrail End Anchor.

The special anchor section is defined as being 50 feet long (the last 50 feet of cable prior to the point where it comes into contact with the w-beam). The "protection length" for the cable guardrail will end at this 50-foot point.

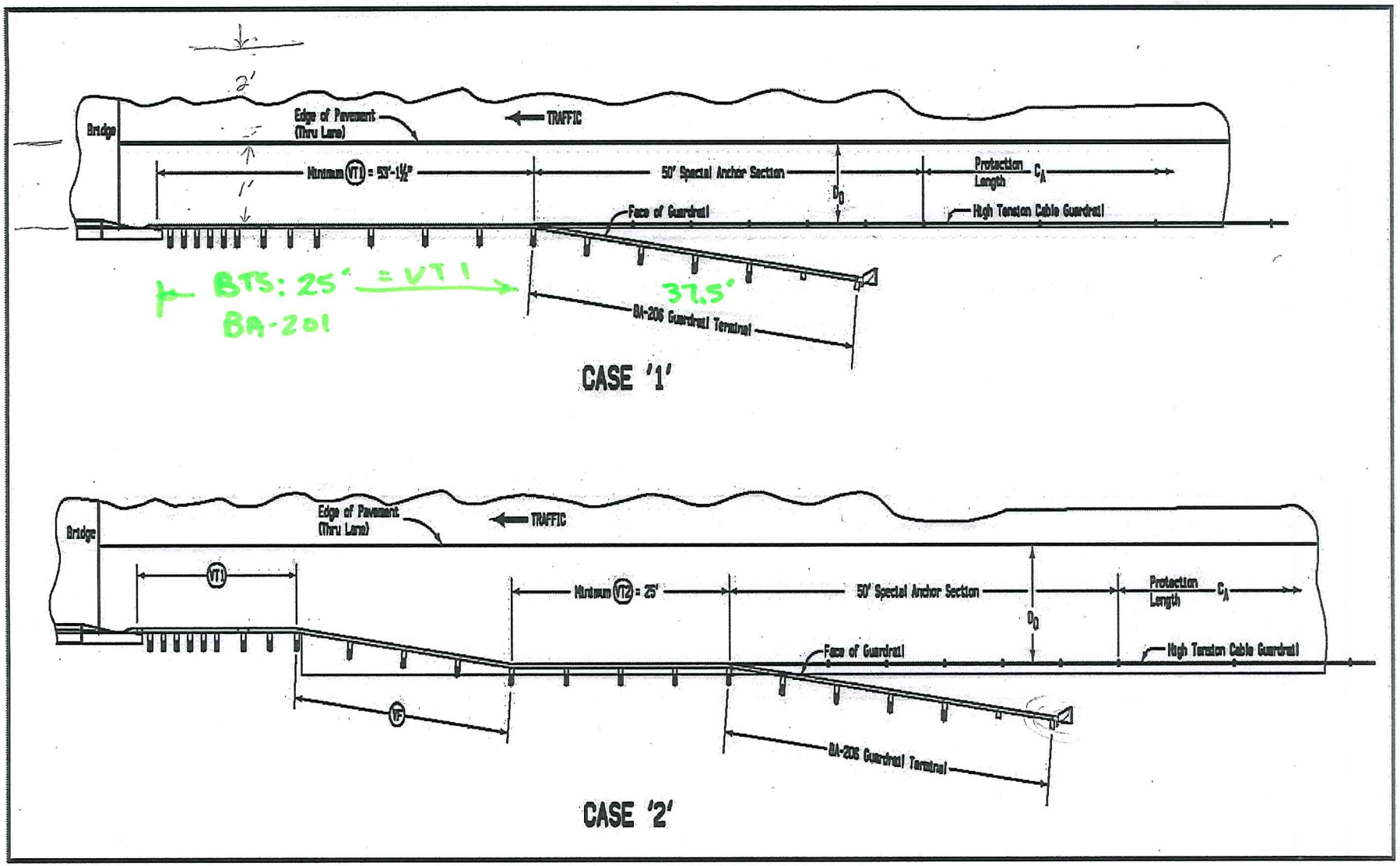
Include the following estimate reference note:

> "This contract item covers the permanent attachment of high tension cable guardrail to steel beam guardrail at the locations shown in the contract documents. Provide a connection meeting the high tension cable guardrail manufacturer's specifications.
>
> This item includes the following: 50 feet of high tension cable guardrail, any additional lengths of cable required, attachment hardware, special steel beam guardrail sections, modifications to any existing steel beam guardrail sections, and any additional labor, equipment, or materials necessary to provide for a complete connection assembly.
>
> The Engineer will count the number of Guardrail, Special Anchor Sections.
>
> For each Guardrail, Special Anchor Section properly installed, the Contractor will be paid the contract unit price."

Typically, only a short length of steel beam guardrail is needed at bridge ends – a BTS followed by an end terminal. In these cases, provide at least 25 feet of w-beam guardrail on a tangent between the BTS and the end terminal (min. VT1 = 53'-1½"). This section of guardrail will be used for the cable attachment. See "Case 1" on page 2. This may require that the high tension cable guardrail be flared in to meet the steel beam guardrail. Note that the maximum flare rate for the cable is 50:1, and that the cable should not be flared anywhere within 100 feet of the steel beam guardrail connection.

Sometimes a longer steel beam guardrail installation may be required. This could be due to a secondary hazard located near the end of the bridge or where the cable installation line is offset further from the road. In these cases, provide at least 25 feet of w-beam guardrail on a tangent just prior to the end terminal (min. VT2 = 25'-0"). This section of guardrail will be used for the cable attachment. See "Case 2" on page 2.

NOTE: **Do not use the BA-205 standard end terminal with the special anchor section. Instead, use BA-206, "Steel Beam Guardrail Flared End Terminal for Cable Connection."**


Bridge
Edge of Pavement (Thru Lane)
TRAFFIC
Minimum VT1 = 25'-1½"
50' Special Anchor Section
Protection Length C_A
D_O
Face of Guardrail
High Tension Cable Guardrail
BTS: 25' = VT1
BA-201
37.5'
BA-206 Guardrail Terminal
CASE '1'
Bridge
Edge of Pavement (Thru Lane)
TRAFFIC
VT1
Minimum VT2 = 25'
50' Special Anchor Section
Protection Length C_A
D_O
Face of Guardrail
High Tension Cable Guardrail
VF
BA-206 Guardrail Terminal
CASE '2'