RESPONSE TO D.S. BROWN RFI – STEEL ELASTOMERIC BEARINGS
NOVEMBER 25, 2013

Following are the RFI questions generated by Jeff Clark of VTrans on the Steel Support Beam Details. Original RFI email is attached for reference.

Reference RFI email from Jeff Clark dated 11/22/2013.
RFI Date: 11/22/2013

VHB responses are in ***bold italics*** following each comment.

Received from Jeff Clark of VTrans. November 22, 2013.

RFI Questions and Responses:

1. Sheet 6 of 104 Note # 15 states that all structural steel shall be galvanized. Are the field connections made with Type I mechanically galvanized bolts, nuts and washers?

   Yes, field connections and hardware should be Type 1 galvanized. The Contractor should ensure that holes are sufficient to accommodate galvanized bolts.

2. Sheet 74 of 104 Section A-A Are the ¾" X 8" H.S. bolts welded to the top plate of the steel support beams? If Yes, are they shop or field welded?

   No, the ¾" X 8" H.S. bolts are not welded to the top plate of the support beam, they are intended to be point-bearing only and not welded. If VTrans prefers these bolts to be welded to the top flange, this should only be done once the project is complete and all necessary adjustments have been made to the panels (the connections have been detailed to allow for the panels to be adjusted to plumb when needed throughout the erection process). We assume that field welding of galvanized pieces will require galvanizing repair in conformance with Specification Section 726.08.

3. Sheet 74 of 104 Are the holes in the bottom of the steel support beam, which attach the 6X4X3/4 angles shop drilled or match drilled in the field?

   We have assumed that the holes in the bottom of the support beam are shop drilled in order to facilitate the erection process. We would also consider slotted holes in the angles (along the centerline of the support beam) to help facilitate the erection process as field adjustments in panel locations should be anticipated.

4. Sheet 74 of 104 Detail C Instead of welding the angle to the nut could we use a nut and washer on both sides of the angle? Is the 1/2X1X8 bar shown transverse to the support beam in Detail C and longitudinal in Section A-A?

   Nuts and washers: We suggest welding the nut to the angle as shown. Additional nuts under the angle (for 'lock-off' after erection is complete) are a good idea. The detail was designed with field adjustments to the panels in mind (bringing the panels into plumb and adjusting while other panels are erected as needed). If the Contractor believes that they can routinely adjust the panels using nuts below the angle just as easily, and locking-off

with a nut above the angle once all panels are erected and CIP coping is installed, that would be acceptable, but we suggest that the Contractor recognize this in advance.

½ X 1 X 8 Bars: There are two bars required on the support beam. One "continuous" bar which should run longitudinally along the support beam. This bar is for safety reasons during erection (as a 'stop' to keep the panels from the edge of the beam during erection until the bolts under the beam secure the panels transversely). The longitudinal bar should not conflict with the placement of the panels (in other words, the bar should be placed well away from the anticipated contact point of the vertical ¾" bolt). The transverse bar (short bar) should be field welded after the panels are in-place. This bar is intended to keep the panels from 'walking' while in-service since the bridge is on a 7.5% grade. This would be similar to 'chalking the wheels' of a trailer once parked. Field welding of galvanized pieces will require repair per Specification Section 726.08.

5. General comment at end of email:

   The fabricator has expressed concerns with only having the hand holes on the inside face of the support beam. The galvanizing process will sometimes relieve stresses induced into welded structure by welding and flame cutting. They are asking if it would be better to have hand holes on both faces of the support beam to minimize the potential for sweep. Normally sweep can be easily corrected with heat. Once the galvanizing has been applied heat straightening is not an option.

   Installing hand holes on each side of the steel support beam is acceptable. This wasn't included in the design since the hand holes will not be accessible once the concrete panels are installed. If it is desired to have hand holes on each side of the beam to facilitate fabrication of the beam, we take no exception to this request.

Goodrich, Gregory

From: Clark, Jeff <Jeff.Clark@state.vt.us>
Sent: Friday, November 22, 2013 11:41 AM
To: Goodrich, Gregory
Cc: Fitch, Jennifer; Symonds, Wayne
Subject: Steel Support Beams Middlebury RS 0174(8)

Hi Greg,

After looking at the Contract Plans for the Middlebury RS 0174(8) project I have some questions concerning the Steel Support Beam details.

1.) Sheet 6 of 104 Note # 15 states that all structural steel shall be galvanized. Are the field connections made with Type I mechanically galvanized bolts, nuts and washers?

2.) Sheet 74 of 104 Section A-A Are the ¾" X 8" H.S. bolts welded to the top plate of the steel support beams? If Yes, are they shop or field welded?

3.) Sheet 74 of 104 Are the holes in the bottom of the steel support beam, which attach the 6X4X3/4 angles shop drilled or match drilled in the field?

4.) Sheet 74 of 104 Detail C Instead of welding the angle to the nut could we use a nut and washer on both sides of the angle? Is the 1/2X1X8 bar shown transverse to the support beam in Detail C and longitudinal in Section A-A?

The fabricator has expressed concerns with only having the hand holes on the inside face of the support beam. The galvanizing process will sometimes relieve stresses induced into welded structure by welding and flame cutting. They are asking if it would be better to have hand holes on both faces of the support beam to minimize the potential for sweep. Normally sweep can be easily corrected with heat. Once the galvanizing has been applied heat straightening is not an option.

Feel free to contact me with any additional questions or comments

Jeff Clark
VTrans