

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program

333 Burma Rd.
Oakland, CA 94607
(510) 622-5660, (510) 286-0550 fax



*Flex your power
Be energy efficient!*

July 21, 2009

Contract No. 04-0120F4
04-SF-80-13.2 / 13.9
Self-Anchored Suspension Bridge
Letter No. 05.03.08-000021

Michael Flowers
Project Executive
American Bridge/Fluor, A JV
375 Burma Road
Oakland, CA 94607

Dear Michael Flowers,

Tower Struts

Type 1, 2, and 3 tower struts are currently being fabricated by ZPMC on Changxing Island. The contract plans call for double-sided fillet welds – of 24mm, 14mm, and 22mm for strut types 1, 2, and 3 respectively – from the stiffeners to the web and flange plates. Typical fillet weld symbols for the stiffener to web and flange plate welds for Type 1 struts are shown in Figure 1 below (Type 2 and Type 3 struts are detailed similarly.)

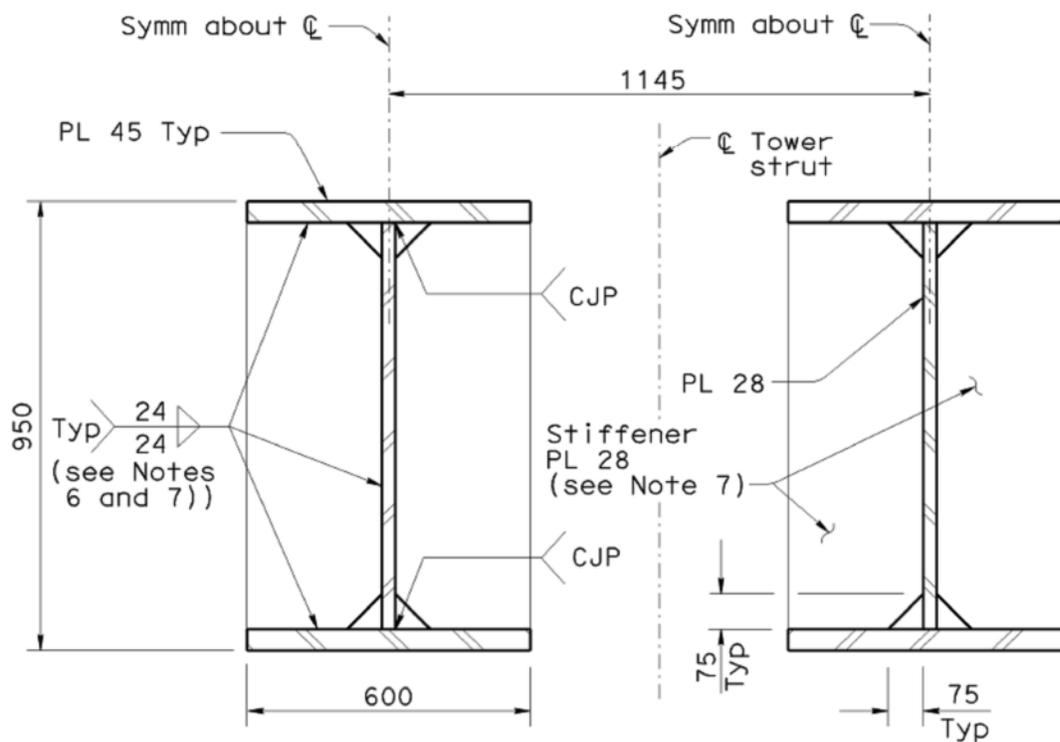


Figure 1

Section B-B from sheet 564/1204: Strut Type 1 Details

Notes on *Tower Strut Details No. 3, 5, and 7* (sheets 564, 566, and 568/1204 of the contract plans) specify that “*The termination of the fillet weld between the stiffener and the web shall have a 1:1 slope and shall be ground smooth.*” With the 75 chamfer, shown in Figure 1 above, changed to the 75mm cope as requested in ABF-RFI-1318R01 and approved by the Engineer on 29-April-2008, the fillet weld terminations are required by the contract specifications to be as shown in Figure 2 below.

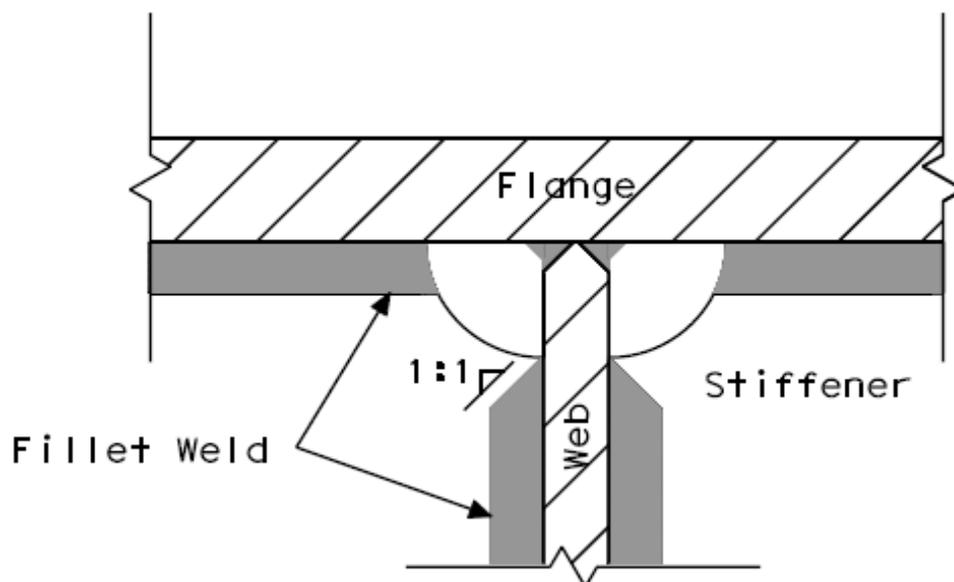


Figure 2

Unfortunately, the typical as-fabricated struts at ZPMC have oversized fillet welds that extend along the stiffener/web joints and continue into the copes with full wrap-arounds. These wrap-arounds, also known as boxing as defined in Figure 23 (F) of AWS A3.0: 2001, if required, would have been indicated on the design drawings as specified in Section 2.8.1.7 of AWS D1.5M: 2002. The presence of these wrap-arounds in the stiffener/web cope creates a stress concentration that reduces the shear deformation capacity and seismic performance of the shear links. Therefore, wrapping the stiffener to web fillet welds into the copes in future struts will not be acceptable to the Department; and struts already fabricated with wrap-arounds must be mitigated.

Notwithstanding 42 of the fabricated struts have been previously green-tagged, struts not in contract compliance must be remedied and repaired by the Contractor at his expense, or they will be rejected. In order to minimize impacts on ABF and ZPMC, struts previously fabricated and green-tagged will be found acceptable as long as the following minimum requirements are achieved:

1. The weld profile inside the copes shall be feathered and ground smooth.
2. There shall be no sharp edges in the wrap-around of the web-to-stiffener fillet weld.
3. The clear distance between the toe of the web-to-stiffener fillet weld and the toe of the flange-to-web reinforcing fillet weld shall be a minimum of 10-mm as shown in Figure 3 below.
4. For the first and last stiffeners on each end of the strut (where the web and flange plates have a thickness transition), item 3 shall not apply. In those locations, the toes of each weld shall be blended smooth.

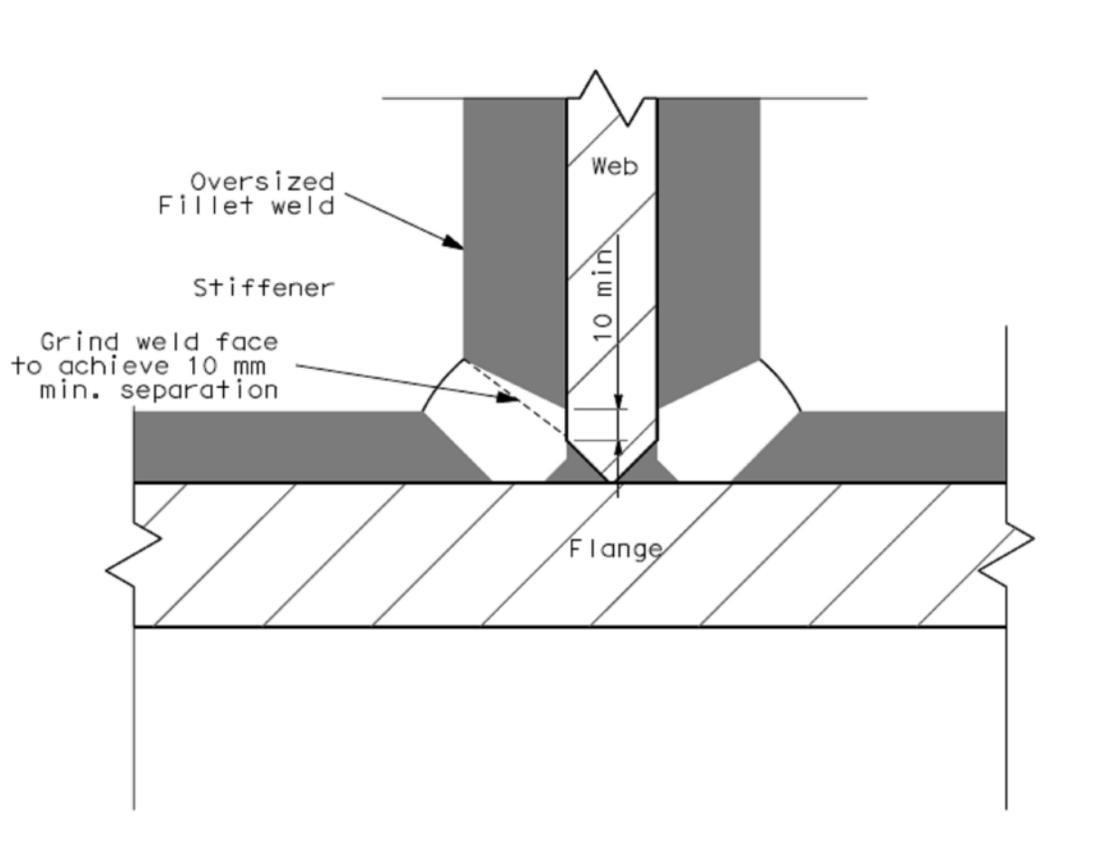


Figure 3 - Retrofit Strategy

AMERICAN BRIDGE/FLUOR, A JV

05.03.08-000021

Page 4 of 4

Your attention to the seismic safety of the new SFOBB is greatly appreciated. Please contact Doug Coe at 137-6132-2704 if you have any questions or would like to discuss this issue further.

Sincerely,

GARY PURSELL
Resident Engineer

cc: Peter Siegenthaler
Gary Pursell
Rick Morrow
Jason Tom
Marwan Nader
Brian Maroney
Mazen Wahbeh
Keith Devonport
File: 05.03.08-000021