

CONTRACT CHANGE ORDER MEMORANDUM

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| TO: Pete Siegenthaler, Prin TE / | | FILE: E.A. 04 - 0120F4 | | |
| FROM: Kannu Balan, Senior TE | | CO-RTE-PM SF-80-13.2/13.9 | | |
| CCO#: 176 | | SUPPLEMENT#: 0 | Category Code: CHPA | FED. NO. |
| COST: \$0.00 | | INCREASE <input type="checkbox"/> | DECREASE <input type="checkbox"/> | CONTINGENCY BALANCE (incl. this change) \$175,433,263.81 |
| SUPPLEMENTAL FUNDS PROVIDED: \$0.00 | | HEADQUARTERS APPROVAL REQUIRED? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO | | |
| CCO DESCRIPTION: OBG Planar Alignment | | PROJECT DESCRIPTION: CONSTRUCT SELF-ANCHORED SUSPENSION BRIDGE | | |
| Original Contract Time: 2490 Day(s) | Time Adj. This Change: 0 Day(s) | Previously Approved CCO Time Adjustments: 501 Day(s) | Percentage Time Adjusted: (including this change) 20 % | Total # of Unreconciled Deferred Time CCO(s): (including this change) 3 |

THIS CHANGE ORDER PROVIDES FOR:

Accepting as "fit-for-purpose" the final condition of the Orthotropic Box Girder (OBG) steel deck skin plates at the transverse welded field splice joints connecting the OBG lifts.

During field erection and fit up of the fabricated OBG lifts some misalignments were observed between the adjoining deck plate joints. As identified by a field survey, the misaligned areas exceeded the allowable tolerances provided in the America Welding Society (AWS) D1.5 Bridge Welding Code. An Engineering analysis was performed to determine the acceptability of the out of tolerance misalignment. The Contractor submitted for approval a report titled, "Behavior of Complete Joint Penetration Field Welds Between Orthotropic Box Girder Segments," dated October 28, 2010, prepared by Dr. John M Barsom of Barsom Consulting Ltd. and Kevin Smith of American Bridge / Fluor Enterprises Inc., A Joint Venture (ABFJV). This report described the final welded condition of the lift joints, analyzed and discussed the secondary stresses that may result from the planar misalignments, analyzed the fatigue behaviors at the weld locations, and supports the weld repair procedures used to mitigate the misalignments. This report was reviewed and concurred by the following:

- The current chair of AWS Bridge Welding Code D1.5, Mr. David L. McQuaid of DL McQuaid & Associates (10/22/10)
- Dr. Brian Maroney, Deputy Toll Bridge Program Manager (10/15/10), and
- The Toll Bridge Program Seismic Safety Peer Review Panel (TPSSPRP) (10/22/10).

This is a no cost change. The Contractor's Report and Engineering analysis are acceptable to the Department. Other procedures to hydraulically force the adjoining deck plates into alignment were determined to be unacceptable as these would have induced unacceptable locked-in stresses to the deck "U" rib configurations. The design life of the structure is expected to remain unchanged as concerns about metal fatigue were addressed in the report. The inherent complexities of fit up and field welding these large OBG were identified in the Department's Risk Register for this project.

No time adjustment is warranted as this change order does not affect the controlling operation.

This change order has concurrence from Peter Siegenthaler (Principal TE), William Casey (Acting Supervising Bridge Engineer), Rich Foley (HQ Oversight), Ken Terpstra (Project Manager), Wenyi Long (Design Oversight), and Lina Ellis (Maintenance).

The Resident Engineer requests Headquarters CCO Desk "Issue and Approve".

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| CONCURRED BY: | | | ESTIMATE OF COST | | |
|--|---------------------------------|--------------|---|---------------|---------------|
| Construction Engineer: | PCE, Pete Siegenthaler, Prin TE | Date 1/20/11 | | THIS REQUEST | TOTAL TO DATE |
| Bridge Engineer: | Struct Rep, Bill Casey, Sup BE | Date 1/19/11 | ITEMS | \$0.00 | \$0.00 |
| Project Engineer: | CT Oversight, Wenyi Long, P.E. | Date 1/13/11 | FORCE ACCOUNT | \$0.00 | \$0.00 |
| Project Manager: | Proj Manager, Ken Terpstra | Date 1/20/11 | AGREED PRICE | \$0.00 | \$0.00 |
| FHWA Rep.: | | Date | ADJUSTMENT | \$0.00 | \$0.00 |
| Environmental: | | Date | TOTAL | \$0.00 | \$0.00 |
| Other (specify): | HQ, Rich Foley | Date 1/20/11 | FEDERAL PARTICIPATION | | |
| Other (specify): | Struct. Maint, Lina Ellis | Date 1/25/11 | <input type="checkbox"/> PARTICIPATING <input type="checkbox"/> PARTICIPATING IN PART <input checked="" type="checkbox"/> NONE <input type="checkbox"/> NON-PARTICIPATING (MAINTENANCE) <input type="checkbox"/> NON-PARTICIPATING | | |
| District Prior Approval By: | | Date | FEDERAL SEGREGATION (if more than one Funding Source or P.I.P. type) | | |
| HQ (Issue Approve) By: | | Date | <input type="checkbox"/> CCO FUNDED PER CONTRACT <input type="checkbox"/> CCO FUNDED AS FOLLOWS | | |
| Resident Engineer's Signature: | | Date | FEDERAL FUNDING SOURCE | PERCENT | |
|  | | 2-1-11 | _____ | _____ | |
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