

CONTRACT CHANGE ORDER MEMORANDUM

DATE: 9/7/2012

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TO: Tony Anziano, Program Manager /			FILE: E.A. 04 - 0120F4	
FROM: Darryl Schram, Senior TE			CO-RTE-PM SF-80-13.2/13.9	
FED. NO.				
CCO#: 264	SUPPLEMENT#: 0	Category Code: CHPT	CONTINGENCY BALANCE (incl. this change): \$101,564,271.51	
COST: \$463,789.00		INCREASE <input checked="" type="checkbox"/>	DECREASE <input type="checkbox"/>	HEADQUARTERS APPROVAL REQUIRED? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
SUPPLEMENTAL FUNDS PROVIDED: \$0.00		IS THIS REQUEST IN ACCORDANCE WITH ENVIRONMENTAL DOCUMENTS? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		
CCO DESCRIPTION: Load Transfer Bolt Tensioning			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:

Providing labor and equipment to fully staff two full time cable band bolt tensioning crews working 12 hour days, 6 days per week. The two crews will be fully dedicated to the constant re-tensioning of cable band bolts throughout load transfer phases 1, 2, and 3. At each phase of load transfer the following cable band bolts shall be tensioned:

Phase 1: Continually tension all phase 1 and 3 cable band bolts. Do not tension phase 2 cable band bolts.

Phase 2: Continually tension all phase 1, 2, and 3 cable band bolts.

Phase 3: Continually tension all phase 1, 2, and 3 cable band bolts.

The cable band bolts listed in each phase of load transfer shall be fully tensioned as often as practicable but at a minimum once per week. The Contractor will determine the daily cable band bolt tensioning priorities based upon the daily work demands. Cable band bolts shall be tensioned to a pressure reading of the jacking system that is equal to the 1.168 MN tension directed in the Department's response to ABF-RFI-002886R00 dated 09-August-2012. The Contractor will continue to perform bolt tension measurements as the Contractor determines necessary in order to maintain control of the work.

Special Provisions Section 10-1.60, "Cable System," subsection "Erection - Cable Bands," states that the cable band bolts shall be tensioned to the forces specified on the plans. Contract plan sheet 762R2 of 1205, "Cable Details No. 5," note 1, provides for an installation tension of 1 MN per bolt. This section also provides for a final cable band bolt re-tensioning once the design load of the steel box girder has been transferred to the cable system but it does not provide any guidance as to the minimum required cable band bolt tension during the various stages of load transfer. This change order will allow for an increased cable band bolt tension force and provide cable band bolt tensioning direction during load transfer as follows:

During cable band installation and initial bolt tensioning the Contractor experienced higher bolt tension losses than expected, well in excess of 10%. These losses are thought to be attributable to bolt/nut anchor set and further cable compaction. Through discussions in the weekly cable meeting and the submission of ABF-RFI-002886R00 the Department directed an increase to the cable band bolt installation tension to the ASTM proof load of 1.168 MN.

The Contractor elected to submit for approval, ABF-SUB-002709R00, a varying schedule of minimum cable band bolt tensions depending on the loads in the suspender ropes at the various stages of load transfer. In some cases this submittal allows the cable band bolt tensions to be as low as 300 KN. While this submittal does provide an extremely efficient possible solution, the risk associated with the Contractor's analysis is far greater than the Department can accept. The Department has determined that to maintain an acceptable level of risk, during load transfer the minimum allowable cable band bolt tension should not be less than 650KN. This change order will provide the needed load transfer cable band bolt tensioning guidance by directing the Contractor to provide the necessary labor and equipment to continuously tension all cable bands thereby minimizing the risk of a potential cable band slip during load transfer.

The intent of this change order is to make sure that once load transfer commences, and throughout phases 1 through 3 of load transfer, the continuous tensioning operation will provide the best opportunity to maintain a minimum average bolt tension for all cable band bolts at 650 KN. Also, by directing the Contractor to continuously tension all cable band bolts this

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effort will continue to further compact the cable beneath the cable bands thereby helping to decrease the potential for cable band bolt tension losses over time.

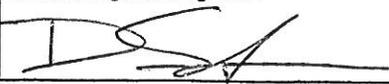
The Department's direction for the Contractor to furnish an additional cable band bolt tensioning system will enable the Contractor to fully staff two full time cable band bolt tensioning crews as directed by this change order. Upon completion of cable band tensioning operations, the additional specialized equipment's salvage value will be credited to the Department.

This work is not covered by any contract items. Therefore, payment for this work will be Adjustment of Compensation at Lump Sum for \$463,789.00, which can be financed from the contingency fund. A detailed cost analysis is on file.

This change order modifies Bid Item 67 - Erect PWS Cable System.

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

This change order has obtain concurrence from William Casey (Supervising TE), Rich Foley (HQ Oversight), Ken Terpstra (Project Manager), and Wenyi Long (Bridge Design).

CONCURRED BY:			ESTIMATE OF COST		
Construction Engineer:	William Casey, Sup TE	Date 9/6/12		THIS REQUEST	TOTAL TO DATE
Bridge Engineer:	CT Oversight, Wenyi Long, P.E.	Date 9/6/12	ITEMS	\$0.00	\$0.00
Project Engineer:		Date	FORCE ACCOUNT	\$0.00	\$0.00
Project Manager:	Proj Manager, Ken Terpstra	Date 9/7/12	AGREED PRICE	\$0.00	\$0.00
FHWA Rep.:		Date	ADJUSTMENT	\$463,789.00	\$463,789.00
Environmental:		Date	TOTAL	\$463,789.00	\$463,789.00
Other (specify):	HQ, Rich Foley	Date 9/11/12	FEDERAL PARTICIPATION		
Other (specify):		Date	<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		
 11/5/12			_____		

