

CONTRACT CHANGE ORDER MEMORANDUM

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. No	
CCO#: 358	SUPPLEMENT#: 0	Category Code: AXZZ	CONTINGENCY BALANCE (incl. this change) \$41,784,343.42	
COST: \$50,000.00			INCREASE <input checked="" type="checkbox"/> DECREASE <input type="checkbox"/>	
SUPPLEMENTAL FUNDS PROVIDED: \$0.00			HEADQUARTERS APPROVAL REQUIRED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
CCO DESCRIPTION: ESW Planar Indication Repair			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: 0 Day(s)	Percentage Time Adjusted: (including this change) 0 %	Total # of Unreconciled Deferred Time CCO(s): (including this change) 22

THIS CHANGE ORDER PROVIDES FOR:

Repairing electroslog weld (ESW) planar indications including but not limited to the following locations F-5130, G-5260, H-2710, J-5210, L-4310, L-5290, L-6940, P-1945, P-3130, and Q-1250.

During the quality control non-destructive testing of the Electroslog welds of the tower seismic shear plates, planar type indications were discovered. These type of indications may not be properly evaluated using standard ultrasonic inspection techniques in accordance with AWS D1.5. In order to properly evaluate planar type indications, AWS D1.5 Table 6.2 and the Project Special provisions Section 10-1.59 Steel Structures, Subsection Inspection and testing prescribe the pitch-catch ultrasonic inspection technique, however AWS D1.5 does not prescribe an accurate acceptance criterion, nor is the method described sufficiently in the code to properly evaluate the indications.

As a result, ABF in cooperation with the Department developed a pitch catch ultrasonic testing procedure to properly evaluate these indications. The planar type indications were then examined using the following steps:

1. The indication was located and evaluated using the standard pulse echo techniques. The pulse echo indication level is recorded as ILPE.
2. The UT machine is then switched to the dual transducer mode. The rear transducer is manipulated to maximize the indication while leaving the front transducer stationary. The indication level is noted.
3. The front transducer is then manipulated and the indication level is noted.
4. The lowest indication level from steps 2 and 3 is recorded as the pitch-catch indication level (ILPC).
5. The pulse echo indication level (ILPE) is then subtracted from the pitch-catch indication level (ILPC) and recorded as the indication difference level (ILDF).

The accuracy of this method was verified by performing excavations of indications with different ILDF ratings. All indications excavated that had an ILDF less than or equal to +0 were found to be rejectable. Excavations of indications with an ILDF from +1≤ILDF≤+6 were inconclusive. Sixteen indications fell within the +1≤ILDF≤+6 range. Of these, only 10 indications in this range are remaining.

Due to the amount of time required to perform the investigation excavations (1 week per indication), and the limited number of indications remaining in this range, the contractor elected to discontinue the verification excavations. The Department and the Contractor agreed to split (50/50) the costs of repairing the ten remaining planar indications that fall within the range of +1≤ILDF≤+6 since the results of the verification excavations within this range were inconclusive.

The Department estimates an additional cost of \$50,000.00 extra work at force account for this change, which can be financed from the contingency fund. A detailed cost analysis is on file.

Consideration of a time adjustment will be deferred until completion of the work specified herein. Determination of a commensurate time adjustment will be made in accordance with Section 10-1.13, "PROGRESS SCHEDULE (CRITICAL PATH METHOD)" and Section 10-1.14, "TIME-RELATED OVERHEAD" of the Special Provisions, as well as Section 8-1.07, "LIQUIDATED DAMAGES", of the Standard Specifications

This change order has concurrence from William Casey (Supervising TE), Rich Foley (HQ Oversight), Wenyi Long (Bridge Design), Marwan Nader (Design Consultant), and Lina Ellis (Maintenance).

