

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#: 289	SUPPLEMENT#: 0	Category Code: CHPT	CONTINGENCY BALANCE (incl. this change) \$46,769,394.62
COST: \$3,305,479.66		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: T1 Fenders and Footing		PROJECT DESCRIPTION: CONSTRUCT SELF-ANCHORED SUSPENSION BRIDGE	
Original Contract Time: 2490 Day(s)	Time Adj. This Change: DEF 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) 8

THIS CHANGE ORDER PROVIDES FOR:

Modifying the Pier T1 fenders as follows:

- Revise reinforcing bars in the fender modules.
- Widen the closure pour at the precast rib/Tower footing interface.
- Reduce rib depth and length and install varying thickness bearing pads.
- After forming for the closure pour at fender ribs, power wash the reinforcement and surface of concrete in the closure pour area without damaging reinforcement coating. Water inside the closure pour shall be removed immediately after power washing is complete. Provide divers to seal tight closure pour forms.

Revising the as-built Pier T1 footing as follows:

- Remove existing reinforcing bars that conflict with fender post tensioning rod anchorages.
- Protect reinforcing in the blockout with lumber during non-working periods.
- Provide credit for removal of cement stabilized sand that will not be performed.
- Perform survey of detailed as-built condition of Pier T1 footing.
- Abrasive blast to bare metal in accordance with SSPC-SP6 the corroded unprotected (uncoated) steel elements in the blockout including anchor plates, shear studs, pile sleeves, and top plates. Then apply two coats of zinc rich primer in accordance with Special Provisions Section 10-1.69 "Clean and Paint Structural Steel."
- Repair epoxy coated steel reinforcing in the blockout.
- Repair epoxy coated looped steel reinforcing embedded into the sides of Pier T1.
- Support blasting and coating reinforcing and uncoated steel in the blockout and top 1/3 of looped steel reinforcing by providing barge support, hoisting supplies between barge and Pier T1, and installing access catwalk.
- Remove marine life attachments on the concrete surface, which interfere with installation of fender modules, with high pressure water.
- Compensation is provided for the differential between straight time and overtime or double time for labor costs expended to increase shift durations and weekend work as necessary to mitigate CCO 289 impact to Pier T1 fender contract work including the removal of the favco crane, T1 erection tower, and temporary tower D foundations.
- Provide compensation to Contractor's subcontractor for inefficiencies and all other impacts incurred due to changes and extra work directed by the Department and associated with fender installation extended duration.
- Remove existing timber embedded in the Pier T1 fender closure pour area, concrete that covers timber, and unsound concrete. After concrete removal is complete, remove dirt and loose items on concrete surface by power wash.
- Support removal and replacement of reinforcing bars by providing equipment and material transportation between Pier T1 and the Alameda yard, providing barge support, and hoisting supplies between barge and Pier T1.
- Repair reinforcing bars after removal of temporary protective lumber.

The tower foundation was constructed under the E2/T1 Contract (No. 04-0120E4) with the fender construction being performed under the SAS Contract. This was done in order allow the future SAS Contractor construction barge access as close as possible to the foundation base for the tower construction. The fenders would then be constructed once the tower erection was complete.

As originally designed, the fender system was to be cast in place. In order to reduce construction time and limit the need

for the construction of a coffer cell, the E2/T1 Contract issued Contract Change Order (CCO) 18 to modify construction details to accommodate a precast design. The SAS Contract details were also modified for a precast design prior to bid. Due to the timing of the bid opening of the SAS Contract (2006) and the completion of the E2/T1 Contract (2008) it was understood that a change order would be required to modify the SAS fender details to accommodate the final as-built condition of the E2/T1 Contract. This CCO provides for those modifications to adjust to the as-built condition of the tower foundations. In addition this CCO provides for the cleaning and repair of existing elements of the fender system (constructed under the E2/T1 Contract) that is a result of the time period between completion of the E2/T1 Contract and completion of the fender system under the SAS Contract.

To address both the as-built condition and the tidal zone interaction the following work is being performed:

- Widening closure pours and modifying rib reinforcing will resolve misalignment with the loop reinforcing extending out of the Tower footing and provide adequate cover over the reinforcing.
- Precast fender ribs will be revised and bearing pads will be installed to resolve differences in the as-built condition of the corbel ledge and the Tower footing top and face.
- At the top of footing block out, not all of the timber was removed after the footing concrete was placed, therefore it must be removed to prevent interference with the fender closures.
- Several reinforcing bars extending from the footing will be removed to resolve interference with the fender rod anchorages.
- The closure pour area will be power washed to remove marine life and chlorides affixed to the concrete and steel surfaces.
- A detailed survey will be performed to document the as-built condition of the Pier T1 footing to provide for reinforcing steel modifications to adjust the precast fender details to that of the as-built footing.
- The structural steel block out at the top of the footing will be cleaned to remove all areas of rust and chlorides.
- Some of the epoxy coated rebar in the Pier T1 footing show signs of rust. About half of the rebar loops are submerged in sea water with marine life attached to them. The rebar coating will need to be repaired and the marine life removed prior to concrete placement for the fender connection. The top 1/3 of the rebar loops, that are not underwater, will be blasted clean and then the coating will be repaired. All other rebar loops will be power washed.

In addition Special Provisions Section 10-1.46 "Precast Concrete Fender Modules" Subsection "Working Drawings" allows the Contractor to place the precast fender closure pour under water. However, the Department has determined that it is in the best interest of the completed work to revise this provision and instead require the Contractor to seal tight the closure pour forms, power wash the surfaces of the rebar and concrete to remove chlorides, and cast the closure in dry conditions.

This change order resolves the costs associated with Contractor Request for Information (RFI) numbers 3097, 3114, 3145, 3146, 3147, 3221, and 3395 with respect to changes listed above.

The cost of this change order is \$2,951,562.00 lump sum, \$303,917.66 agreed unit price, and \$50,000.00 force account for a total of \$3,305,479.66, which can be financed from the contingency fund. A detailed cost analysis is on file.

The construction of the Pier T1 fenders is on the project completion critical path and therefore 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.

The SAS Risk Register carries Risk ID No. 122 "Tower Skirt and Fender System" to account for revisions and changes to the tower skirt and fender system. Risk was assessed beyond the values covered in the SAS Change Order Log Dated July 1, 2013 - (CCO 98 = \$3.5M and CCO 289 = \$500K for as sum total of \$4M) The new estimates for the cost of these changes is \$7.2M. The difference between the estimates is within the range contemplated in the risk register (\$3.5M to \$5.5M).

This change order has concurrence from William Casey (Supervising TE), Rich Foley (HQ Oversight), Tony Anziano (Program Manager), Wenyi Long (Bridge Design), Lina Ellis (Maintenance), and Jing Chen (District Design).

Toll Bridge Program Oversight Committee (TBPOC) approved this change order on October 3, 2013, in the not to exceed amount of \$3,500,000.00.

