

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-012665**Date Inspected:** 16-Mar-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1500**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site

<b>CWI Name:</b>	Bernard Docena, Jesse Cayabayab			<b>CWI Presentation:</b>	Yes	No	
<b>Inspected CWI report:</b>	Yes	No	N/A	<b>Rod Oven in Use:</b>	Yes	No	N/A
<b>Electrode to specification:</b>	Yes	No	N/A	<b>Weld Procedures Followed:</b>	Yes	No	N/A
<b>Qualified Welders:</b>	Yes	No	N/A	<b>Verified Joint Fit-up:</b>	Yes	No	N/A
<b>Approved Drawings:</b>	Yes	No	N/A	<b>Approved WPS:</b>	Yes	No	N/A
				<b>Delayed / Cancelled:</b>	Yes	No	N/A
<b>Bridge No:</b>	34-0006			<b>Component:</b>	SAS OBG 2E/3E-A 1E/2E-E-2		

**Summary of Items Observed:**

The Quality Assurance (QA) Inspector, Rick Bettencourt was on site at the job site between the times noted above. The QA Inspector was on site to randomly observe the in process welding and inspection of the weld joints identified as 1E/2E-E and 2E/3E-A the following observations were made:

**2E/3E -A**

The QA Inspector randomly observed the ABF welders Mitch Sittinger, Song Tao Huang and Huang Jin Quan preparing to continue to perform the FCAW tack weld started on the previous day shift. The QA Inspector observed the induction heat blankets had achieved the minimum required preheat of 150°F for the given thickness of the top deck plate. The QA Inspector observed the ABF welder to be welding the FCAW tack weld utilizing the given parameters of ABF-WPS-D1.5-F3200-2. The QA Inspector randomly verified the FCAW parameters and they were 242 Amps, 22.7 Volts and a travel speed of 425mm/min. The QA Inspector observed the ABF welders join the two top deck plates by welding the bevel to the steel backing bar on both sides of the joint. After the QA Inspector randomly observed the ABF welders join the two members by welding the QA Inspector asked the QC Inspector Tom Pasqualone if the fit up of the weld joint was acceptable (see summary of conversations). The QA Inspector informed the ABF Engineer John Callaghan of the off set issue (see summary of conversations). The Caltrans Structure Material Representative Pat Lowry was on site with the Caltrans Area Construction Manager (ACM) Bill Casey to observe the off set members at 1E/2E-A and 2E/3E-A. The QA Inspector pointed out the off set of the members joined by welding at 1E/2E-C-1 as well as the off set at 2E/3EA-1 and A5 (see summary of conversations). The QA Inspector performed dimensional measurements of the off set at A5 and noted it appeared to be approximately 5mm misaligned and spanning over an area of approximately 75mm beginning at the end of A5 (pictured). The QA Inspector performed dimensional measurements of the off set at A1 and noted it appeared

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to be approximately 8mm-4mm misaligned and spanning over and area of 300mm beginning at A1. Upon the arrival of the QA Inspector Danny Reyes, the QA Inspector Rick Bettencourt informed Mr. Reyes of the offset members described above. The QA Inspector noted Mr. Reyes informed the QA Inspector he would write and submit an incident report.

1E/2E-E-2

The QA Inspector randomly observed the ABF welder identified as Rory Hogan setting up to perform FCAW at the above identified location. The QA Inspector noted the SE QC Inspector Bernard Docena was on site to monitor the in process FCAW. The QC Inspector informed the QA Inspector the fit up of the above identified weld joint appeared to be in general compliance with the contract requirements. The QA Inspector performed random dimensional measurements of the above identified weld joint and noted, it appeared to be in general compliance with the contract requirements. The QA Inspector randomly observe the SE QC Inspector set and adjust the ABF welders FCAW parameters utilizing a piece of scrap material. The QA Inspector noted the FCAW machine was set at 250 Amps, 24.1 Volts and a travel speed of 230mm/min. The QA Inspector noted the FCAW parameters and dimensional tolerances appeared to be in general compliance with ABF-WPS-D1.5-3042A-1. The QA Inspector noted the ABF welder was utilizing the FCAW process manually and not using the semi-automated bug-o track system. The ABF welder informed the QA Inspector, he was locking in the joint near the top or near the "F" plate prior to depositing the FCAW root/fill passes in the majority of the weld joint. The Inspector randomly observed the ABF welder complete approximately 300mm of the top of E2 by the end of the QA Inspectors shift.



### Summary of Conversations:

When asked by the QA Inspector, the SE QC Inspector Tom Pasqualone informed the QA Inspector the 2E/3E-A weld joint was not all acceptable due to mismatch on the ends of the joint. The QA Inspector asked the QC Inspector why the ABF welders were joining the members by welding if the fit tolerances were not met. The QC Inspector informed the QA Inspector, the ABF Assistant Welding Superintendent Dan Ieraci instructed the ABF welders to perform the welding.

Mr. Callaghan informed the QA Inspector the off set could not be corrected due to the rigidity of the steel in the corner locations. Mr. Callaghan went on to inform the QA Inspector ABF will not likely perform any transitioning after the weld is completed. The QA Inspector asked Mr. Callaghan to elaborate on why no transitioning by

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welding would be performed the correct the offset members. Mr. Callaghan informed the QA Inspector Caltrans Design did not want the off set to be corrected by welding in China, thus they do not want it to be corrected by welding here on the job site. The QA Inspector informed Mr. Callaghan, he did not know that to be a true statement and would require consulting with the QA Task Lead Inspector Bill Levell on the off set issue.

The QA Inspector met with the SMR Pat Lowry, ACM Bill Casey along with John Callaghan, Caltrans Senior Gil Klebanov. Mr. Lowry asked the QA Inspector to point of the off set of the two members identified as 1E/2E-A. The QA Inspector showed the above identified persons the off set members at the above identified location. Mr. Callaghan explained, do to the rigidity of the plates being joined at various locations, it is not possible to bring the off set or misalignment within the tolerances of AWS D1.5-02. Mr. Callaghan went on to inform the above persons, it was to his belief the Caltrans design staff did not want the off set corrected by welding in China, so it was to his understanding the same criteria would be applied on the job site field splices. Mr. Lowry informed Mr. Callaghan that was indeed not the case on the job site filed welding, and Mr. Lowry asked Mr. Callaghan if the off set would be corrected by welding. Mr. Callaghan agreed that any off set or misalignment of structural members would be corrected by welding and transitioning of the misaligned members. Mr. Callaghan went on to inform the above identified persons, ABF would go back and correct the offset at 1E/2E-A, 1E/2E/C as well as address the offset at the correct welding location at 2E/3E-A.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916)-813-3677, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Bettencourt,Rick	Quality Assurance Inspector
<b>Reviewed By:</b>	Levell,Bill	QA Reviewer

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