

**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 #: 1x.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-012805**Date Inspected:** 26-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>	Bernie Docena and Jesus Cayabya			<b>CWI Present:</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>	Orthotropic Box Girder		

**Summary of Items Observed:**

Caltrans Office of Structural Material (OSM) Quality Assurance Inspector (QAI) Joselito Lizardo was present at the Self Anchored Suspension (SAS) job site as requested to perform observations on the welding of components for the San Francisco Oakland Bay Bridge (SFOBB) Project.

Due to the excessive porosity that ABF welding personnel encountered yesterday, ABF welders were noted changing their welding equipment from wire feeder, wire whip, spool of wire, shielding gas line, gas cylinders etc. prior welding. The welders thought that one of the welding equipment they changed could have been the culprit in causing the excessive porosity. After changing their equipment and calibrating their welding machine to acceptable parameters it was already 1000 hours.

After the welders break, QA randomly observed ABF/JV qualified welders Rory Hogan (ID #3186) and Jeremy Dolman (ID #5042) continue perform CJP groove (splice) back welding fill pass on Orthotropic Box Girder (OBG) L1E/L2E plate 'D1'. The welders were observed welding in the 4G (overhead) position utilizing a dual shield Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1/16" diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-3040A-4. The welder was using a track mounted welder holder assembly that is remotely controlled. The joint being welded has the backing bar gouged using the Esab Plasma Arc machine and was ground smooth. The splice joint was preheated to greater than 200 degree Fahrenheit using Miller Proheat 35 heating machine prior welding and the vicinity was properly protected from wind and other atmospheric influence. During welding, ABF Quality Control (QC) Bernie Docena was noted monitoring the welding parameters of the welder. The parameter readings taken during welding were 255 amperes, 23.0 volts with travel speed of 190 mm per minute travel speed which are deemed acceptable to

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# WELDING INSPECTION REPORT

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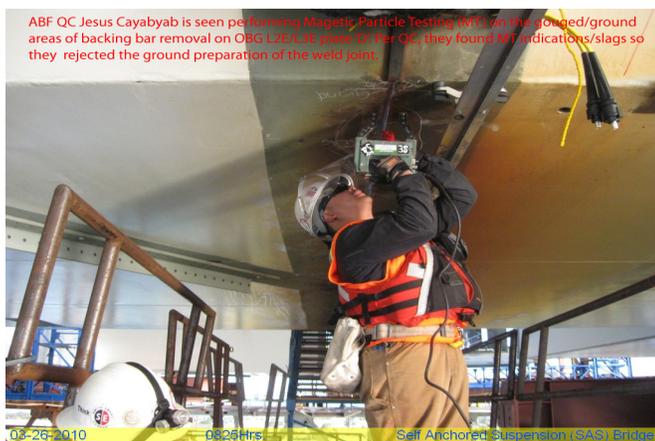
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contract specifications.

From 1000 to 1145 hours, QAI noted that the welders have completed four (4) passes on the splice joint plate D1 (0 – 2000mm) without any trace of porosity. In every pass that they weld, QC Bernie Docena was noted verifying the preheat and other parameters and the welders were also noted cleaning every pass of their weld. The weld passes produced at this time look satisfactory and deemed acceptable to contract specifications.

QAI observed ABF personnel completed back gouging of backing bar at OBG L1E/L2E plate 'C'. After gouging, ABF personnel were noted performing grinding on the gouged splice butt joint backing bar removal. In another OBG location, OBG L2E/L3E plate 'D', QAI observed ABF QC personnel Jesus Cayabyab and Bonifacio Daquinag perform Magnetic Particle Testing (MT) on the gouged and ground splice joint. The ABF QC was using a Magnaflux AC/DC electromagnetic yoke with serial number 517750 and red magnetic powder as detecting media . After completing the MT, ABF QC informed this QAI that they are rejecting the weld joint ground preparation due to the presence of MT indications/numerous slags.



## Summary of Conversations:

As stated above.

## 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

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remedial efforts please contact SMR Mohammad Fatemi (916) 227-5298, who represents the Office of Structural Materials for your project.

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