

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-012852**Date Inspected:** 31-Mar-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1100**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1930**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site

CWI Name:	Jesus Cayabyab and Jim Cunningham			CWI Present:	Yes	No	
Inspected CWI report:	Yes	No	N/A	Rod Oven in Use:	Yes	No	N/A
Electrode to specification:	Yes	No	N/A	Weld Procedures Followed:	Yes	No	N/A
Qualified Welders:	Yes	No	N/A	Verified Joint Fit-up:	Yes	No	N/A
Approved Drawings:	Yes	No	N/A	Approved WPS:	Yes	No	N/A
				Delayed / Cancelled:	Yes	No	N/A
Bridge No:	34-0006			Component:	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.

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) L2E/L3E plate 'D1' (0 to 4250mm). 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 gouged and ground splice butt joint was also Non Destructive Testing (NDT) tested using the Magnetic Particle Testing (MT) which was performed and accepted by ABF QC Jim Cunningham. The splice joint was preheated to greater than 150 degree Fahrenheit prior welding and the vicinity was properly protected from wind. During welding, ABF Quality Control (QC) Jim Cunningham was noted monitoring the welding parameters of the welder. At the end of the ABF shift, the cover pass of the splice butt joint back weld was completed.

At OBG L3E/L4E plate 'D' inside, ABF personnel were noted removing the slag and grinding the top surface of the pass that Dan Ieraci has deposited using the Submerged Arc Welding (SAW). After grinding, Dan Ieraci was noted Submerged Arc Welding (SAW) welding the groove splice butt joint in flat (1G) position. The welder was utilizing F7A6-EM12K-H8, 3.2mm electrode with corresponding Esab OK Flux 10.62 flux and implementing

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Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-4042B-1. The plates being welded have a backing bar attached to the other side. Electric resistance heating bands were also placed on the opposite side of the plate for preheat and maintenance. The preheat temperature was noted >150 degree F prior welding. The welding activities and parameters were monitored by ABF QC Tom Pasqualone. QA performed parameter check at the time of welding and noted an ampere reading of 560 amperes, 32.5 voltages and a travel speed of 381mm per minute. The welding parameters appear in conformance to the contract requirements but the workmanship and appearance of the pass that the welder just welded was uneven and visually unsatisfactory. Due to the appearance of the weld, the ABF personnel continued grinding the pass until the end of their shift.

At OBG L2E/L3E plate 'C' inside, QA observed the middle section of the plate was completely welded and the welders have moved to the top section of plate 'C'. Prior moving, ABF personnel were seen removing the stiffener connection plates to have access for the FCAW-G welding. After the removal of the stiffener plates, the ABF personnel were seen grinding the bevel surface of both plates to have wider root gap. The root gap measured in this location was around 4.0mm.

At OBG L1E/L2E plate D inside, QA observed ABF QC Jesse Cayabyab perform Magnetic Particle Testing (MT) on the cover pass of the splice butt joint. The ABF QC was using a Magnaflux AC/DC electromagnetic yoke with serial number 517750 and red magnetic powder as detecting media. At the end of MT, QC has MT accepted all the plates in between stiffener plates marked D1 to D19 except D18 wherein QC has marked "grind" on three locations due to the presence of slag. QC has also marked "fill" on one of the plates marked D14 due to underfill on the toe of the weld but this was QC MT accepted.



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

Inspected By: Lizardo, Joselito

Quality Assurance Inspector

Reviewed By: Levell, Bill

QA Reviewer