DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
690 Walnut Ave.St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Siegenthaler, Peter
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-025278
Date Inspected: 22-Jul-2011

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 700
OSM Departure Time: 1930
Location: Job Site

CWI Name: William Sherwood and Bonifacio Daquinag

Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**CWI Present:**	☑ Yes	☐ No	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
				Approved WPS:	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: SAS Tower

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.

At OBG 11W/12W side plate ‘C2’ (750mm) inside, QA randomly observed ABF/JV qualified welder Jorge Lopez perform Complete Joint Penetration (CJP) groove (splice) welding root pass to cover pass on the splice butt joint at the corner with bottom plate ‘D’ where the track mounted Bug-o nozzle holder has limited access . The welder was observed perform manual welding in the 3G (vertical) position utilizing a Shielded Metal Arc Welding (SMAW) with 1/8” diameter E7018H4R electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1040B. The joint being welded has a single V-groove butt joint with backing bar. During welding, ABF Quality Control (QC) William Sherwood was noted monitoring the welding parameters of the welder. Prior welding, the fit up alignment was checked by ABF QC William Sherwood and verified by this QA. The alignment was noted less than 3mm on most of the splice weld length except at three (3) locations wherein the alignment was more than 3mm. The locations that have more than the required offset were noted at Y=4980mm to 5030mm with more than 3mm, Y=5031mm to 5130mm with 4mm and at Y=5131mm to 5277mm with 5mm. According to ABF QC, these misalignments were already reported to ABF for further review. At the end of the shift, cover pass welding at location mentioned above was completed.

At the request of Quality Control Field Supervisor, Bonifacio Daquinag, QA has randomly verified the QC VT of the fillet welding of four (4) pipe supports PS-24. The QA verification was performed to verify that the welding and the VT inspection performed by the QC inspector meet the requirements of the contract documents. At the

conclusion of the QA verification it appeared that the weld and the QC inspection complied with the contract documents.

1. 6W-PP41 to PP44 gridline W5 – QA VT verified
2. 6E-PP41 to PP44 gridline E5 – QA VT verified

At the West bound side of the OBG, ABF welders Erick Sparks was noted 2F fillet welding on the cat walk storm tie at various locations. Welder Erick Sparks was noted utilizing Shielded Metal Arc Welding (SMAW) with 1/8" electrode implementing Caltrans approved (WPS) ABF-WPS-D15-F1200A. During the shift and welding, ABF QC Fred Von Hoff was noted monitoring the parameters of the welder. At the end of the shift, fillet welding of 6mm x 300mm long on both sides of the plate welded to the top of deck plate was completed at the following locations;

Panel Point Location OBG
1. PP60-PP61 Outboard West Bound
2. PP74-PP75 Inboard/outboard West Bound
3. PP90-PP91 Inboard/outboard West Bound

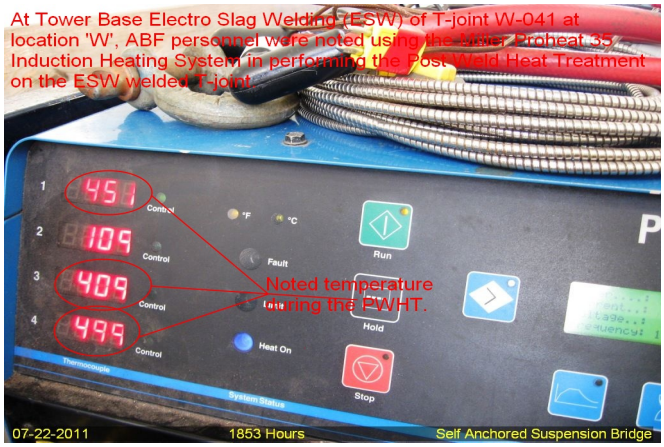
At the Tower Base Electro Slag Welding (ESW) of T-joint W-041 location 'W', this QA was instructed to observe the Post Weld Heat Treatment (PWHT) of the mentioned weld joint due to welding incident that occurred. Two water hoses for the water cooled weld shoes got leaked and partially splashed to the weld joint being welded causing steam reaction to the area. To neutralize the effect of the water splashing into the weld, Caltrans Senior Engineer Marc Woods recommended to perform the PWHT right after the ESW welding completion.

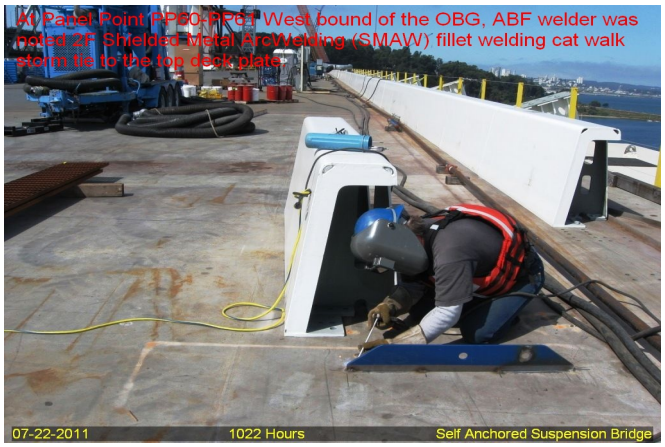
ABF personnel prepared the heater blankets for the inside and outside. ABF also cut strong back from inside and outside to have access for the heater blankets. It was around 1530hours when they completed preparation for the PWHT and started ramping up the temperature. At around 1545hours, one of the hose line for the Miller Proheat 35 Induction Heating System got popped up and squirted the liquid from the hose to the plate causing another steam reaction. The PWHT Heating Machine shut off immediately.

ABF personnel removed all the heater blankets from the inside and outside and prepared a new set up of blankets for the PWHT. It took longer than expected the new preparation for the PWHT. At around 1830hours when they completed the set up for the PWHT and during this time ABF personnel was noted programming the machine to ramp up the heat to 690°F per hour with soak temperature of 435°F and soak time of six (6) hours. The PWHT went well this time and at around 1900hours the temperature was already noted 451°F. Per suggestion from Caltrans, QA does not need to watch the complete duration of the PWHT. At 1930hours, this QA informed Caltrans Engineer Mr. Doug Wright that QA was leaving and informed him about the PWHT was ongoing. ABF Sr. Field Engineer Daniel Hester and ABF Production Manager John Callaghan were noted watching the ongoing PWHT.

WELDING INSPECTION REPORT

(Continued Page 3 of 3)





Summary of Conversations:

No significant conversation ocurred today.

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 Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Lizardo,Joselito	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer