

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-012841**Date Inspected:** 30-Mar-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1200**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 2030**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 'D2' (3500mm to 8500mm). 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 prior welding. 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. QA performed parameter check readings during welding and noted the following: 250 amperes, 23.0 volts with travel speed of 154 mm per minute travel speed which are deemed acceptable to contract specifications. During random observation, QA noted fill to cover passes were welded into the joint without any major issues. Completed fill passes noted at the time deemed acceptable to contract specifications.

At OBG L1W/L2W plate 'D' inside the box, QA performed alignment check on the fit up of the splice butt joint.

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Three locations in between the stiffener plates were measured from North to South and the following measurements (in millimeters) were noted;

1. D1: 6.0 3.5 3.0 D11: 2.0 1.0 1.5
2. D2: 2.0 2.0 2.0 D12: 2.0 2.0 1.0
3. D3: 2.5 2.0 2.0 D13: 2.0 1.5 1.0
4. D4: 2.0 1.0 1.0 D14: 1.0 1.0 0.0
5. D5: 2.0 1.5 1.0 D15: 1.0 1.0 0.0
6. D6: 2.0 2.5 2.0 D16: 1.0 1.0 2.0
7. D7: 2.0 2.0 0.0 D17: 2.0 2.0 1.0
8. D8: 1.0 0.0 0.0 D18: 2.0 1.5 1.5
9. D9: 1.5 1.0 2.0 D19: 1.0 0.0 0.0
10. D10: 1.0 1.5 2.0

According to ABF QC Jesus Cayabyab, location D1 mentioned above wherein the offset measurement is 6.0mm will be requested with Request for Information (RFI) due to limited room for correction.

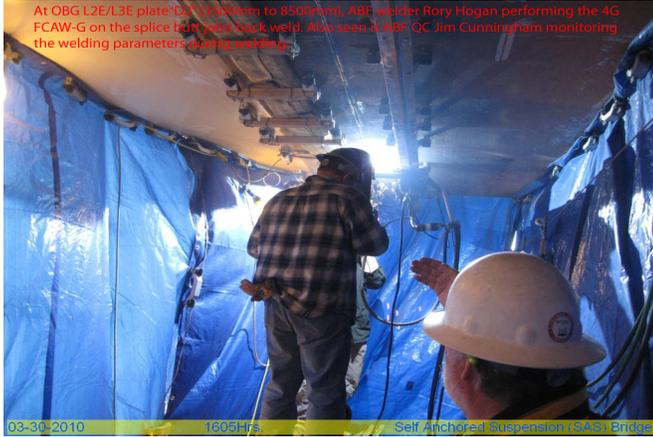
Also at L1W/L2W plate 'C' inside the box, QA performed alignment check on the fit up of the splice butt joint. All the measurements were good (less than 2.0mm) except on three areas; 1 – where the bottom part is connected to the D1 plate wherein it has 6.0mm offset; 2 – near stiffener #3 from bottom wherein it has an offset of 3.0mm and 3 – near stiffener #4 from bottom wherein it has an offset of 4.0mm.

In another OBG location, OBG L1E/L2E plate 'D', QAI observed ABF QC personnel Jesus Cayabyab perform Magnetic Particle Testing (MT) on the flush ground back weld reinforcement of the 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 flush ground back weld reinforcement due to the presence of slag and underfill on the weld. On one area of the joint, QA also noted a disc shape ground area wherein the center has 2.0mm below the base metal. QC also informed QA that he is rejecting this over ground weld.



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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