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

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1x.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-013947
Date Inspected: 08-May-2010

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

OSM Arrival Time: 900
OSM Departure Time: 1600
Location: Job Site

CWI Name:	As noted in Summary			**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:

This Quality Assurance Inspector (QAI) was present at the Self Anchored Suspension (SAS) job site. The following items were observed; see individual item numbers in the body of this report for further details.

Field Splice 1E/2E
1, Bottom Plate D, Ultrasonic Testing of weld repairs in process.

Field Splice 4E/5E
2, Edge Plate B, welding of top 150mm in process.
3, Edge Plate E, welding of top 150mm complete.
4, Bottom Plate D, welding of interior in process.

1, The QA inspector periodically observed The NDT technicians Tom Pasqualone and Mr. Steve McConnell perform ultrasonic testing of the complete joint penetration (CJP) groove weld bottom plate field splice 1E/2E-D. The weld repairs were scanned utilizing a GE USM-35. The testing was performed in accordance with the approved procedure SE-UT-D1.5-CT-100 Rev.4. Following is a list of welds examined and acceptance in accordance with AWS D1.5-2002 in the longitudinal and transverse direction. Testing was not completed on this date.

2, The QAI observed the shielded metal arc welding (SMAW) of the complete joint penetration (CJP) groove weld of the transverse deck plate field splice 4E/5E-B. The welding was performed at the first 150mm from the

intersection with the top plate A by the welder Jin Quan Huang, ID 9340 utilizing the Welding Procedure Specification ABF-WPS-D15-F1040C Rev. 1 in the vertical (3G) position with 1/8" E7018 H4R low hydrogen electrodes. The welding was observed by Quality Control (QC) Inspector Benifacio Daquiang. The minimum preheat temperature of 60 degrees Celsius and maximum interpass temperature of 230 degrees Celsius was verified by the QC. The SMAW average amperage of 125 DC at the welding lead was verified to be within the WPS parameter ranges of 90 to 160 DC amps by the QA inspector. The welding was not completed and appears to be in general compliance with contract documents.

3, The QAI observed the shielded metal arc welding (SMAW) of the complete joint penetration (CJP) groove weld of the transverse deck plate field splice 4E/5E-B. The welding was performed at the first 150mm from the intersection with the top plate A by the welder Chun Fai Tsui ID-3426 utilizing the Welding Procedure Specification ABF-WPS-D15-F1040C Rev. 1 in the vertical (3G) position with 1/8" E7018 H4R low hydrogen electrodes. The welding was observed by Quality Control (QC) Inspector Benifacio Daquiang. The minimum preheat temperature of 60 degrees Celsius and maximum interpass temperature of 230 degrees Celsius was verified by the QC. The SMAW average amperage of 120 DC at the welding lead was verified to be within the WPS parameter ranges of 90 to 160 DC amps by the QA inspector. The welding was completed and appears to be in general compliance with contract documents.

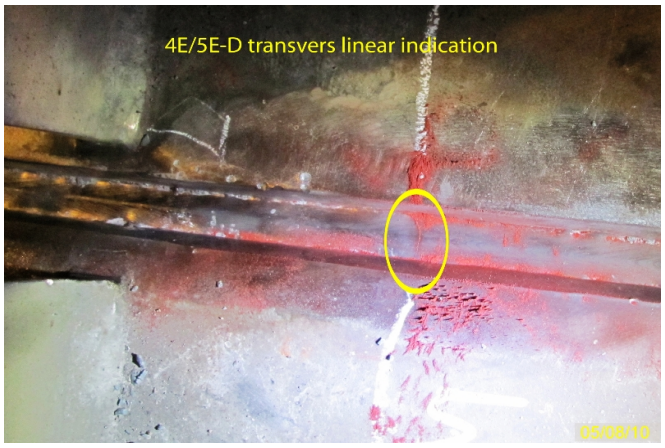
4, The QA inspector observed ABF personnel installing heating units on the outside surface of the complete joint penetration (CJP) groove weld bottom plate field splice 4E/5E-D in preparation for welding.
The QAI observed the shielded metal arc welding (SMAW) of the complete joint penetration (CJP) groove weld of the transverse deck plate field splice 4E/5E-D. The welding was performed to at each corner of the joint root opening to seal the temporary backing. The welding was performed by the welder Jordan Hazelaar, ID-2135 and Mitch Sittinger, ID-0315 utilizing the Welding Procedure Specification ABF-WPS-D15-F1200A Rev.1 in the flat (1G) position with 1/8" E7018 H4R low hydrogen electrodes. The welding was observed by Quality Control (QC) Inspector Bernard Docena. The minimum preheat temperature of 100 degrees Celsius was verified by the QC inspector utilizing Tempilstik temperature indicators. The SMAW average amperage of 115 DC at the welding lead was verified to be within the WPS parameter ranges of 90 to 160 DC amps by the QA inspector. The welding was completed and appears to be in general compliance with contract document.

After the SMAW welding was completed and Mr. Pasqualone measured and recorded planar offset. Measurements were done at approximately 75mm from each stiffener and midpoint between stiffeners. See below for offset measurements verified by the QA Inspector. After Mr. Pasqualone verified dimensions welding of the joint continued utilizing the SAW process. The welding was performed in the areas between the 1st stiffener from the longitudinal diaphragm at each end by the welding operators Jordan Hazelaar ID-2135 and Bryce Howell ID-5591 utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-4042B-1 Rev. 0. The welding was observed by Quality Control (QC) Inspector Bernie Docena. The minimum preheat temperature of 60 degrees Celsius and maximum interpass temperature of 230 degrees Celsius was verified utilizing Tempilstik temperature indicators. The SAW fill pass by Mr. Hazalaar average amperage of 600 DC and voltage of 32.5 DC at the welding head gages and average travel speed of 410 millimeters per minute were verified to be within the WPS parameter ranges by QA inspector. At the end of the first pass, Mr. Pasqualone observed a transverse indication at 2400mm. He verified the indication by magnetic particle testing. The indication was ground out and retested. The indication was still present. See attached digital images. Mr. Pasqualone then directed welding personnel to remove the remaining weld metal in the area of the indication. The area was then rewelded utilizing the same

SMAW process reported above. Mr. Pasqualone reported that this indication appeared to be directly above an unwelded splice in the temporary backing bar and the area would be magnetic particle tested after the backing bar is removed and the weld joint is back-gouged. The SAW welding was not completed and appears to be in general compliance with contract documents.

4E/5E-D offset measurements in millimeters, Measurement #1 75mm from Stiffener, #2 at midpoint, #3 at 75mm from stiffener.

Location	1	2	3
LS-S1	0.5	0.5	0.5
S1-S2	1.0	1.0	1.0
S2-S3	0.5	0.5	0.0
S3-S4	0.5	0.5	0.0
S4-S5	0.5	1.0	0.5
S5-S6	1.0	1.0	0.5
S6-S7	0.5	0.5	0.5
S7-S8	1.0	1.0	0.5
S8-S9	1.0	1.0	0.5
S9-S10	0.5	0.5	1.0
S10-S11	1.0	1.5	1.0
S11-S12	0.0	1.0	0.0
S12-S13	0.5	1.5	0.0
S13-S14	1.0	1.5	1.0
S14-S15	1.0	1.0	0.5
S15-S16	1.0	1.0	0.5
S16-S17	0.0	1.0	0.5
S17-S18	1.0	0.5	0.5
S18-LS	0.0	1.0	1.0



Summary of Conversations:

General conversations with QC personnel regarding welding locations and schedule.

Comments

WELDING INSPECTION REPORT

(Continued Page 4 of 4)

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.

Inspected By:	Lanz,Joe	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer