

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-014179**Date Inspected:** 18-May-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**CWI Name:** Bnifacio Daquinag**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:** SAS OBG 5E/6E-A**Summary of Items Observed:**

The Quality Assurance (QA) Inspector, Rick Bettencourt was on site at the job site between the times noted above.

The QA Inspector was on site to randomly observe the in process welding and inspection of the weld joints identified as 5E/6E-A

and the following observations were made:

5E/6E-A

The QA Inspector randomly observed the ABF personnel being lead by the ABF Project Engineer John Callaghan; attempt to correct the planar misalignment of the top deck plate at 5E/6E-A. The QA Inspector noted ABF began welding temporary attachments at 0900 to the top deck plate. The QA Inspector observed the temporary attachments in the form of a "dog" or a "strong back" being welded to the top deck plate on the lower side of the misaligned members. It was noted initially, ABF was utilizing a 1/4" SMAW fillet weld on three sides of the attachment. The QA Inspector randomly observed Mr. Callaghan insert a 50 ton hydraulic jack or porta power into the notch cut in the attachment and apply force with the hydraulic ram the following events were observed:

1st attachment location Y=8775mm-8800mm (location of the attachment) with 1/4" fillet welds on three sides, the QA Inspector observed the gauge on the jack was reading approximately 2500 PSI when the fillet weld failed and was no longer effective. No reading was taken due the fact the weld failed quickly under force and did not appear to move the deck plate any significant amount.

The QA Inspector observed ABF personnel utilize two attachment plates or "dogs" welded together in an attempt to create a stronger attachment which would not fail and still be within the tolerance of the approved ABF temporary attachment procedure for weld size. I observed the original attachment consisted of 25mm plate and the

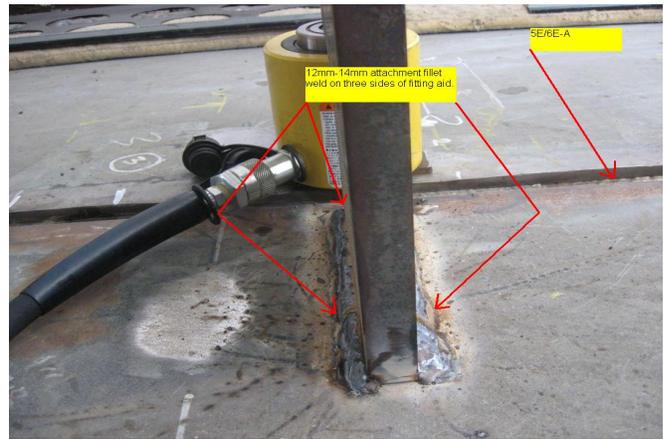
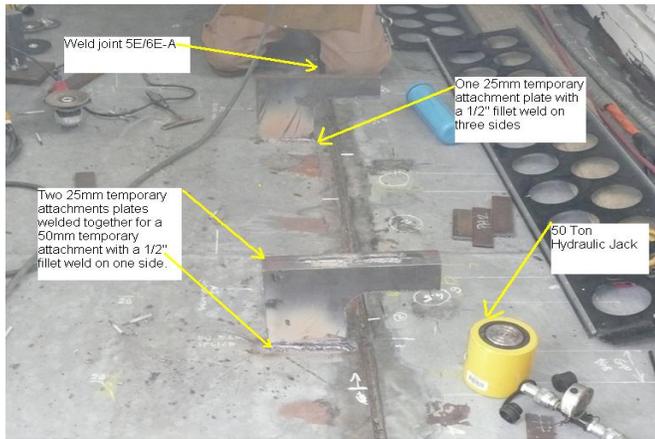
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second attempt consisted of two 25mm plates welded together (pictured below) with a 1/2" fillet weld on one side

2nd attachment location Y=8800mm-8850mm (location of the attachment) with a 1/2" fillet on one side. , the QA Inspector observed the gauge on the jack was reading approximately 3500 PSI when the fillet weld failed and was no longer effective. The QA Inspector observed the QC Inspector perform measurements of the misalignment while the plates were under the force of the jack and noted that it appeared to deflect the plate approximately 1mm. The measurement prior to applying force was 3mm and was cut to 2mm under the load of the hydraulic ram. After the 1/2" fillet weld failed, the plates returned to the original position of 3mm total misalignment.

In addition no other temporary attachments had force applied to them before lunch. The QA Inspector observed the ABF welders install 4 additional "dogs" or temporary attachments in a row at the following locations: Y=8560mm-8535mm, Y=9070mm-9120mm, Y=9805mm-9783mm and Y=10330mm-10280mm. I observed the attachments installed at the Y locations noted above were not two plates welded together, rather they were 25mm plate with a 1/2" fillet weld on three sides which appears to be a direct non conformance with the temporary fitting aid procedure previously submitted by ABF and approved by the department. The QA Inspector noted an Incident Report will be generated for the non conforming issue described above. In addition there appear to be two areas of the top deck plate in which ABF is attempting to correct the planar misalignment issue, in which both areas have dimensions that exceed 4mm total misalignment and no more than 6mm total misalignment. Those areas are between Y locations 8640mm-9120mm and 22710mm-23000mm.



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Summary of Conversations:

The QA Inspector asked the ABF Project Engineer John Callaghan what he intended to do once the jacks have deflected the plate. In other words the QA Inspector inquired to Mr. Callaghan how he intended to hold the total deflection of the plates in place to ultimately correct the planar misalignment. Mr. Callaghan informed the QA Inspector he was not completely sure how he was going to correct the misalignment the repair attempts were in the early stages and at that point, it was entirely unclear on the next step. Mr. Callaghan elaborated, possibly ABF would jack the plates and install wedges under the bottom deck between the "U" ribs or possibly weld a length of bar stock the top plates across the weld joint once the plates had been deflected.

Mr. Callaghan informed the QA Inspector the ABF submittal 001361 R3 is not feasible to comply with for the fitting and reworking of the top deck plates identified above. Mr. Callaghan acknowledged the weld size will need to be increased to at least 12mm on all sides of the attachment to allow the hydraulic jacks to apply force without yielding or breaking the attachment welds. Mr. Callaghan was full aware only 12mm on one side of the attachment or 6mm on two sides was allowed by the approved submittal by the department.

In addition Mr. Callaghan informed the QA Inspector Rick Bettencourt and the QA Inspector Bill Levell, in his opinion (John Callaghan) this attempt to correct the planar misalignment was a complete waste of ABF time. When asked by the QA Inspector what he would rather do to correct the planar misalignment, Mr. Callaghan informed the QA Inspector he would rather correct the misalignment by welding and grinding.

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 Mohammad Fatemi (916)-813-3677, who represents the Office of Structural Materials for your project.

Inspected By:	Bettencourt,Rick	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer
