

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-013828**Date Inspected:** 06-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:** See Below**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 Girders (OBG)**Summary of Items Observed:**

Quality Assurance inspector (QA) Michael Foerder was at the American Bridge/Flour (ABF) job site at Yerba Buena Island in California between the times noted above in order to monitor Quality Control functions and the in process work being performed by ABF personnel. The following items were observed:

1. OBG Field Splice 2E/3E Face C (Inside)
2. OBG Field Splice 2E/3E Face E (Inside)
3. OBG Field Splice 3E/4E Face E (Outside)

Field Splice 2E/3E Face C (Inside)

The QA inspector reviewed this weld face visually from the inside in order to perform a random ultrasonic testing (UT) review of approximately 10% of the completed weld length. Upon initial review of the completed weld it was discovered areas have been marked for minor repair welding, grinding and blending by the QC department for various issues such as insufficient fill, undercut, excessive reinforcement and weld profile. The QA inspector noted the weld does not have a distinguishing mark designating it as final accepted. The QA inspector relocated to weld face E at this time and relayed this information to lead QA inspector Bill Levell and QA inspectors Rick Bettencourt and Dan Reyes for tracking purposes.

Field Splice 2E/3E Face E (Inside)

The QA inspector performed a random 10% UT review on this date between Y locations designated 1250mm-2400mm and 6900mm-7200mm. The scanning was performed from the inside surface as no access was possible from the outside of the OBG and the areas have been coated with a layer of paint. It was noted by the QA

WELDING INSPECTION REPORT

(Continued Page 2 of 3)

inspector this particular weld has an area marked for repair by the QC department adjacent to the bottom plate/side plate intersection. The QA inspector performed the UT review utilizing a zero degree transducer in order to check for laminar reflectors and a 70 degree transducer and wedge combination for the shear wave examination. No rejectable indications were discovered at the time of review for the area between Y locations 1250mm-2400mm, however a class "A" rejectable indication was noted at approximate Y location 7000.

The indication was discovered during the performance of scanning pattern "E" which is designed to scan for indications orientated approximately in the transverse direction. It was noted this area has been previously repaired and the indication is located approximately 15mm from the inside surface effectively being near surface breaking. As the transducer was rotated in the transverse direction the indication was maximized and was given a db rating of +3. The QA inspector went to review the outside surface in order to ascertain if the indication was due to geometry or grinding marks, however due to the scaffolding being removed previously this was not possible and no apparent marks were readily visible. The rejectable indication can be evaluated from both directions (+3, +5) and is approximately 28mm from the center of the weld which places it adjacent to the weld toe on the 2E side of the joint. This information was relayed to QC lead inspector Leonard Cross in which Mr. Cross reviewed the indication with QA and relayed he would look into it a little further and get back with the QA inspector. During this discussion the QC lead inspector mentioned it appeared the indication was in the base metal and therefore would fall under the acceptance requirements for base metal in lieu of table 6.3. The QA inspector relayed the indication was near the heat affected zone, transverse to the direction of the weld, at a repair location and was near surface and therefore should be investigated further. The inspectors discussed the possibilities of the indication being an arc strike, an area repaired in the base metal due to the removal of fitting aids, a mechanical notch or grinding mark, trapped slag from a wider backgouge in that area, a linear indication or inclusion but it should be confirmed. A TL-6027 will be generated for these items for this date.

Later in the shift the lead QC inspector spoke with the QA inspector via phone and relayed he believed the indication to be in the base metal and was not sure of the disposition or remedial action the contractor would perform. This information was relayed to QA lead inspector Bill Levell and an incident will be generated for this item.

Field Splice 3E/4E Face E (Outside)

The QA inspector noted ABF welding personnel Mitch Sittinger and Jordan Hazalaar performing grinding operations in order to excavate and remove the rejectable indications previously identified by QC utilizing Ultrasonic Testing (UT). QC inspector Tony Sherwood was noted to be present in order to monitor the progress and adherence to the welding procedure specification designated as ABF-WPS-D1.5-1001 Repair. The welders proceeded with setting up and initiating the grinding operations, however the QA inspector did not observe any welding at this location during the QA inspector's shift as the QA inspector relocated to another area to perform a UT review.

Summary of Conversations:

As noted above in items observed.

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.

WELDING INSPECTION REPORT

(Continued Page 3 of 3)

Inspected By:	Foerder, Mike	Quality Assurance Inspector
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Reviewed By:	Levell, Bill	QA Reviewer
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