

**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 #: 13.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-001503**Date Inspected:** 19-Feb-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1630**Contractor:** Oregon Iron Works Clackamas, Or.**Location:** Clackamas, OR**CWI Name:** Steve Williams**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:** Hinge K**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector Joe Adame was present at Oregon Iron Works (OIW) to observe welding being performed on a Procedure Qualification Record for this project. The following observations were recorded.

**I. OIW Shop/ Bay 2:**

OIW PQR # CS-025: The Quality Assurance (QA) Inspector was present at the time requested to witness welding being performed on Procedure Qualification Record (PQR) # CS-025. The welding is being attempted with the submerged arc welding process in the flat position (1G). The PQR weld joint is double vee groove weld with a 60° included angle and a closed root. The material being welded is a 100 millimeter (mm) thick A709 grade 485 steel. Length of the test piece is approximately 711 mm long. The PQR is a tubular mock up section of a splice to be performed in production welding. The QA Inspector observed Quality Control (QC) Inspector Scott Reed performing a visual inspection of the weld joint fit up. Mr. Reed accepted the fit up. The welding was being performed by OIW welder Craig Jacobsen (WID# J6). OIW Welding Engineer Greg Roberts and Leadman Norm Peterson were observed monitoring welding parameters and timing each weld pass for determination of travel speed. Mr. Roberts informed the QA Inspector that traditional clampmeters will not accurately measure the AC power source (square wave). The welding electrical parameters are verified on the unit. The welding control box shows a current calibration of the welding unit. The QA Inspector also performed verification of welding parameters, travel speed and documented all relevant test information. The Leadman was observed checking preheat and interpass temperatures with Temperature indicator sticks. Mr. Roberts stated that the minimum preheat is 325° Fahrenheit and maximum interpass temperature is 500° Fahrenheit as described in section 12 of the code. The QA Inspector inquired on what section this PQR is being performed to. Mr. Roberts stated that the test

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## WELDING INSPECTION REPORT

( Continued Page 2 of 3 )

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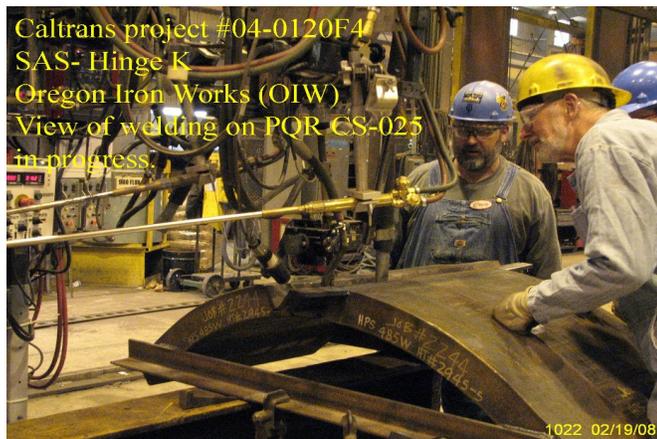
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is being performed to section 5.12. Due to the amount of welding to be performed the PQR testing will continue throughout the coming days. OIW will only be performing testing during the day shift.

\* The QA Inspector received a phone call from Structural Matter Representative Bob McReynolds. Mr. McReynolds informed the QA Inspector that OIW currently do not have an approved WQCP. OIW was also requested by the State to provide additional information in regard to the PQR's to be performed. Mr. McReynolds also stressed that the State does not wish to delay the contractor from performing the testing. The SMR requested that the QA Inspector monitor welding activities on the PQR to ensure that project specifications are being followed.

II. OIW QC Office: The QA Inspector was informed by OIW Quality Control Manager (QCM) Steve Williams that OIW have submitted a complete WQCP with revisions to address the pending issues. Mr. Williams also stated that the submittal contains the requested information to address the PQR issues. This submittal was transmitted on this date to the prime contractor. The QCM and the QA Inspector also discussed the contractor's responsibilities when performing a PQR. Mr. Williams stated that the specials or code do not specify that a QC Inspector monitor each weld pass. Mr. Williams did agree that QC shall inspect and approve the weld joint and visually inspect the completed piece. The QCM also stated that the welding engineer Greg Roberts is a certified welding inspector in case the State is concerned. During testing, Mr. Roberts has been documenting the variables for each weld pass

(Attached picture from this observation)



### Summary of Conversations:

As noted in the contents of this report.

### 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 Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

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**Inspected By:** Adame, Joe

Quality Assurance Inspector

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# WELDING INSPECTION REPORT

( Continued Page 3 of 3 )

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**Reviewed By:** Wright,Mark

QA Reviewer