

**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 #: 70.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-010036**Date Inspected:** 05-Nov-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1630**Contractor:** Japan Steel Works**Location:** Muroran, Japan**CWI Name:** T. Imai**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:** Tower, Jacking, and Deviation Saddles**Summary of Items Observed:**

On this date Caltrans OSM Quality Assurance (QA) Inspector Mr. Art Peterson was present during the times noted above for observations relative to the work being performed in Fabrication Shop #4 and the Foundry Shop at Japan Steel Works.

**Fabrication Shop #4:**

Storage of Saddles: West Deviation Saddle Segments - W2-E1, W2-E2, and W2-E3

The QA Inspector observed that west deviation saddle segments W2-E1, W2-E2, and W2-E3 are being stored in Fabrication Shop #4 until the paint quality work plan (PQWP) is approved. Afterwards the west deviation saddle segments will be moved into the paint shop to start the blast cleaning and metalizing operation on the interior of the troughs.

**Foundry Shop:**

NDT Operation in-process on Saddle: West Jacking Saddle (before final machining)

The QA Inspector observed Nikko Inspection Services (NIS) Quality Control (QC) Non-Destructive Testing (NDT) Inspector Mr. H. Kohama (#86) performing the magnetic particle test (MPT) inspection by the (wet method) on the interior of the trough and exterior of the trough in between the rib sections of the west jacking saddle at locations where the major and minor weld repairs were previously performed. Prior to the start of the MPT inspection, NIS QC NDT Inspector Mr. H. Kohama verified the lifting force and the sensitivity of the yoke as per ASTM E709. The QA Inspector verified that the bath concentration of the non-fluorescent particles were between (1.2 and 2.4) mL per (100) mL as per ASTM E709 Section 20.6.3 and the manufacturer's recommendations. The actual settling volume was recorded at (2.0) mL as measured using a centrifuge tube with a

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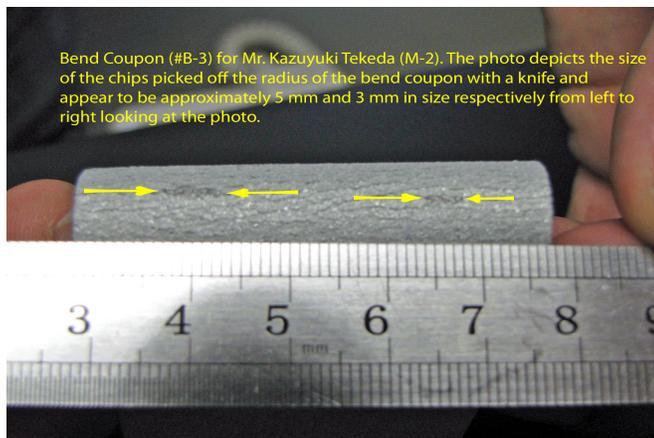
(1.5) mL stem after allowing the particles to settle for approximately (30) minutes prior to taking the settling volume measurement. The QA Inspector observed that the MPT inspection performed by Mr. H. Kohama was in-process at the end of the QA Inspectors' shift.

## Mechanical Test Lab

Witness of Bend Test Coupons: Thermal Spray Coating (TSC) Operator Qualification test

The QA Inspector witnessed the bend tests of (3) TSC operators to qualify the operator to perform the metalizing operation on the interior of the troughs on the (3) tower saddle segments, (6) west deviation saddle segments, (1) west jacking saddle, and (2) east saddles. A total of (5) corrosion control carbon steel bend coupons were coated and prepared by each TSC operator for the bend test operation. The dimensions of the corrosion control carbon steel bend coupons were (50 mm x 200 mm x 1.25 mm) and were bent around a (12 mm) mandrel with the mandrel positioned perpendicular to the long dimension of the steel bend coupons. The TSC operators who deposited the TSC onto the carbon steel bend coupons were Mr. Toshihiko Noda (#M-1), Mr. Kazuyuki Takeda (#M-2), and Mr. Kikuo Suzuki (#M-3). After the carbon steel coupons were bent around (180) degrees, all of the bend test coupons displayed marginal cracks along the full width (50 mm) bend radius of the coupons and except for (1) bend test coupon (#B3) of Mr. Kazuyuki Tekeda (#M-2) appeared to be in compliance with Annex C of ANSI/AWS C2.18-93. The TSC of bend test coupon (#B3) of Mr. Kazuyuki Tekeda (#M-2) was able to be picked off the radius of the bend test coupon with a knife at (2) locations and size of the chips picked off were approximately (3 ~ 5 mm) at each location. The disposition of bend test coupon (#B3) regarding whether Mr. Kazuyuki Tekada (#M-2) passed the bend test portion of his qualification test was made by Caltrans Structural Materials Representative Mr. Kittric Guest. Mr. Guest stated that if the tensile bond qualification test requirements are met on the (5) specimens than Mr. Kazuyuki Tekada (#M-2) will pass his TSC operator qualification test. See attached photo for reference of the size of the TSC chips that were picked off the bend radius with a knife.

Unless otherwise noted in this report, all observations reported on this date appeared to be in general compliance with the applicable contract specifications.



## Summary of Conversations:

No significant conversations were reported on this date.

## 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 Nina Choy at (510) 385-5910, who represents the Office of Structural Materials for

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your project.

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<b>Inspected By:</b>	Peterson, Art	Quality Assurance Inspector
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<b>Reviewed By:</b>	Edmondson, Fred	QA Reviewer
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