

**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 #: 82.28**WELDING INSPECTION REPORT****Resident Engineer:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-025411**Date Inspected:** 19-Jul-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1500**Contractor:** Westmont Industries**Location:** Santa Fe Springs, CA**CWI Name:** Ruben Dominguez**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 L & R**Component:** Maintenance Travelers**Summary of Items Observed:**

On this date, Caltrans Quality Assurance Inspector (QA) Sherri Brannon is present at the Westmont Industries (WMI) jobsite in Santa Fe Springs, California for the purpose of observing fabrication and QC functions for the SAS Superstructure, Bid Item #99, Maintenance Traveler and Bid Item #100, Maintenance Traveler (Bike Path).

**E2/E3 Bike Path Traveler**

This QA Inspector made random shop observations and observed no fit-up performed on the E2/E3 Bike Path Traveler Assemblies on this date.

**SAS-WB Traveler – Lower Truss Frame Assembly**

Welding Completed on the SAS-WB Traveler – Lower Truss Frame Assembly on Thursday 5-12-11. Quality Control Mr. Dominguez informed QA Inspector that Smith Emery did complete visual inspection and waiting on WMI to weld and grind on some area's found by visual inspection. QA Inspector randomly observed WMI personnel grinding pick-up area's found by QC on this date. Grinding was not completed on this date.

**E2/E3-WB Traveler**

This QA Inspector randomly observed WMI production personnel Mr. Richard Fuentes WID #3201 and one helper, performing layout, fitting and tack welding activities at various locations for the E2/E3-WB Traveler Assemblies. This QA Inspector observed Mr. Fuentes performing the FCAW in all positions randomly throughout the shift.

This QA Inspector observed WMI production welder Mr. Charles Newton (WID # 3200) continuing to perform

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Flux Core Arc Welding (FCAW) activities on the E2/E3-WB Traveler Assemblies. This QA Inspector observed Mr. Newton performing the FCAW in all positions randomly throughout the shift.

### SAS-WB Traveler - Fixed Stair Section

This QA Inspector randomly observed WMI production personnel Mr. Cesar Canales WID #3195 and helper Mr. Jesus Rayas WID#3197, performing layout, fitting and tack welding activities at various locations for the SAS-WB Traveler Assemblies. This QA Inspector observed Mr. Canales performing the FCAW in all positions randomly throughout the shift.

This QA Inspector randomly observed that Smith Emery, CWI, QC Inspector Mr. Ruben Dominguez was present, during the above mentioned welding and fitting activities. During random observation, this QA Inspector observed that the applicable WPS's and copies of the shop drawings, appeared to be located near each work station, where the above mentioned welding and fitting activities were being performed. This QA Inspector randomly verified that the consumable material, utilized during the welding appeared to be in compliance with the applicable WPS and that the above mentioned welders were currently qualified for the applicable process and position of welding. This QA Inspector randomly observed QC Inspector Mr. Dominguez verifying the in-process welding parameters, including voltage, amperage, pre-heat and travel speed and the parameters appeared to be in compliance to the applicable WPS.

QA Inspector Brannon also completed part 1 of 2 materials on hand TL-38 Inspection Request dated July 13, 2011 for Westmont Industries on various Pneumatic Components. See QA Inspector Brannon's TL 0649 Report of Materials on Hand dated 07-19-2011 for additional information. Note: Part 1 is Pneumatic Components for Zemarc Corporation.

This QA Inspector observed that the activities mentioned above, appeared to be in compliance with the contract requirements and this QA Inspector observed no non-conforming issues, on this date.

### RPI Coating (Blast and Paint)

This QA Inspector performed random shop observations and observed that RPI is on site to continue abrasive blast and prime coat Trolley Links Assemblies. QA Inspector was informed by RPI Coating Quality Control (QC) Representative Mr. Miguel Nunez that RPI is going to start abrasive blasting and apply the Sherman Williams Zinc Clad II prime coat to the Trolley Links today. Later in the morning this QA Inspector randomly observed that RPI personnel performing abrasive blasting activities on the Trolley links assemblies. After abrasive blasting was completed, QA Inspector then observed RPI Coating Quality Control (QC) Representative Mr. Miguel Nunez performing what appeared to be random surface profile checks on the abrasive blasted base metal surfaces. This QA Inspector observed Mr. Nunez utilizing what appeared to be Testex Press-O-Film and a micrometer to perform the testing. Initially, this QA Inspector observed Mr. Nunez applying the film to the blasted surface then utilizes one end of a pen to perform rubbing activities on the clear portion of the test strip. This QA Inspector then observed Mr. Nunez utilize a micrometer to measure the surface profile on the clear film part of the strip, in which the rubbing was performed. Mr. Nunez explained to this QA Inspector that the initial setting on the micrometer was set at 2mils over, due to the thickness of the X-Coarse Press-O-Film paper. During observation, this QA Inspector observed that the readings appeared to be 3.4 mils, and 2.9 mils. This QA Inspector noted surface profiles appear to with contract documents. Contract documents require a surface profile of 1.5 mils, (40 um) - 3.4mils (86um). This QA Inspector observed QC performing soluble salt test at one (1) location. Soluble salt tests

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results were zero (0) parts per million (PPM) which appeared to meet or exceed one test per 200 square meters, per the contract requirements. After testing, this QA Inspector observed that the soluble salt content appeared to be well below the max of 10 micrograms per square centimeter. Note: After abrasive blasting was completed QA noticed that ten trolley links had unacceptable weld profiles revealed by blasting. QA Inspector informed WMI CWI QC Inspector Mr. Ray Anaya of these areas. Mr. Anaya performed visual inspection on the areas found by QA and agreed that areas should be touched by welding. Areas were taped off prior to prime coating.

This QA Inspector randomly observed RPI Coating performing what appeared to be primer application activities within what appeared to be within and 8 hour time frame of the above mentioned blasting activities.

Environmental readings taken by RPI at the time of blast/primer application are as follows respectively: Air Temperature 67 F/72 F, Relative Humidity 62%/73%, Wet Bulb Temperature 60 F/64 F, Dew point 58 F/59 F and Surface Temperature 67 F/78 F.

This QA Inspector performed measurement on dry film thickness (DFT) with Type 2 (magnetic gage), DFT's thickness reading of the prime coated Trolley Links Assemblies prime coated on 07-18-11 are an average of three (3) thickness reading are as follows 6.5 mils, 5.2 mils, 5.9 mils 6.6 mils, 6.4 mils, and 5.6 mils. QA Inspector also, observed Mr. Nunez documenting daily activities on RPI Coating, Daily Inspection Report.

Mr. Nunez informed QA Inspector Brannon that on the interim coating inspection of the Sherman Williams Zinc Clad II, Inorganic Zinc Rich prime coating he would be performing adhesion testing on the Trolley Links that had been prime coated on 7-11-11, 7-12-11, 7-13-11 and 7-14-11, using an calibrated Elcometer Hydraulic Adhesion Tester Model 108 which is in conformance with ASTM D4541 – Standard Test Method for Pull-Off Strength of Coating Using Portable Adhesion Tester. Mr. Nunez stated that he had glued a total of 2 dollies on prime coated surface from each date using super glue quick set epoxy. QA Inspector Brannon observed Mr. Nunez performing the above mentioned tests. Adhesion test for primed coated links on 7-11-11 – first test 1100psi/7.6MPa, second test 900psi/6.2MPa, links primed coated on 7-12-11 – first test 650psi/4.5MPa, second test (glue failure), links primed coated on 7-13-11 – first test 900psi/6.2MPa, second test 750psi/5.2Mpa, and links primed coated on 7-14-11 – first 325psi/2.2Mpa (paint failure) and second test (glue failure). Mr. Nunez informed QA Inspector that he would glue on additional dollies for re-test on the components primed on 7-12-11 and 7-14-11. Testing observed by QA Inspector appeared to comply with contract documents.

QA Inspector also observed Mr. Nunez perform dry film thickness reading with a Type 2 (magnetic gage), Mr. Nunez performed thirty (30) DFT's thickness reading for each date on the prime coated Trolley Links Assemblies prime coated on 7-11-11 and 7-13-11. Reading range from 3.0mils through 5.4mils for trolley links primed on 7-11-11, and reading range from 3.2mils through 6.0mils for trolley links primed on 7-13-11.

This QA Inspector randomly observed RPI Coating personnel sanding dry spray or overspray on Trolley links that were prime coated 7-13-11 using scotch brite heavy duty. After sanding was completed QA Inspector observed RPI Coating personnel water rinsing trolley links with a minimum pressure of 35Mpa/5,077 PSI pressure washer. After rinsing was completed RPI moved the components inside Bay 6.

Note: The above mentioned Trolley Link Assemblies had been previously abrasive blasted and primed coated and was determined by Sherman Williams Representative Mr. Eric Anderson, RPI Coating Mr. Gary McDonald and RPI Coating Mr. Carlos Torres that RPI Coating had greatly exceeded the 3.4 mils to 5.9 mils for prime coating

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requirements and made the decision to re-blast and re-prime Suspension Arms and Trolley Link Assemblies. RPI Coating Mr. Gary McDonald and RPI Coating Mr. Carlos Torres will also reevaluate the E2/E3 EB Traveler prime coating thickness at a later date.



## Summary of Conversations:

QA Inspector informed Caltrans Representative SMR Mr. Nicolai Hvass of the above information 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 (510) 385-5910, who represents the Office of Structural Materials for your project.

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**Inspected By:** Brannon, Sherri

Quality Assurance Inspector

**Reviewed By:** Lanz, Joe

QA Reviewer

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