

**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 #: 99.28**WELDING INSPECTION REPORT****Resident Engineer:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-027166**Date Inspected:** 08-Feb-2012**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** L & M Industrial Fabricators**Location:** Tangent, Oregon**CWI Name:** Tom Dreyer**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 Head Chimney**Summary of Items Observed:**

This Quality Assurance (QA) Inspector, Art Peterson arrived at L & M Industrial Fabricators between the times noted above to randomly observe Quality Control (QC) personnel monitor the welding operations performed by L & M personnel on chimney parapet walls fabricated to the Tower Heads. The following observations for the extra work being performed under the following contract change order were:

CCO: 196 - Description: Construct parapet walls at the Tower Heads

North Tower Chimney Parapet:

A5 Wall:

This QA Inspector randomly observed L & M welder Otis Smith (Welder ID #19) performing the repair weld operation on a longitudinal linear indication detected at "Y" Location (1460) mm; for Length (25) mm; and Depth (15) mm by the NDT UT method on 2/07/2012. The complete-joint penetration (CJP) corner-joint groove weld repair weld operation was per the Flux Cored Arc Welding (FCAW-G) gas shielding process in the (3G) vertical position connecting (A5b)- wall plate to (A5a)- base plate of the North Tower Head Chimney Parapet.

This QA Inspector observed QC Inspector Tom Dreyer verify prior to the start of the weld operation, that the minimum preheat temperature as per the approved WPS was established and afterwards; verified that the welding parameters (Amps, Volts, and Travel Speed) were in accordance with WPS LM FC-01-Repair using Hobart Excel Arc E71T-1 (.052") diameter electrode.

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### A6 Wall:

This QA Inspector randomly observed L & M welder Otis Smith (Welder ID #19) performing the repair weld operation on a transverse linear indication detected at "Y" Location (1368) mm; for Length (8) mm; and Depth (15) mm by the NDT UT method on 2/07/2012. The complete-joint penetration (CJP) corner-joint groove weld repair weld operation was per the Flux Cored Arc Welding (FCAW-G) gas shielding process in the (3G) vertical position connecting (A6b)- wall plate to (A6a)- base plate of the North Tower Head Chimney Parapet.

This QA Inspector observed QC Inspector Tom Dreyer verify prior to the start of the weld operation, that the minimum preheat temperature as per the approved WPS was established and afterwards; verified that the welding parameters (Amps, Volts, and Travel Speed) were in accordance with WPS LM FC-01-Repair using Hobart Excel Arc E71T-1 (.052") diameter electrode.

### North Tower Chimney Parapet:

#### A5 Wall:

This QA Inspector observed L & M Industrial Fabricators Quality Control (QC) NDT Inspector Leo Jim Jr, performing NDT Ultrasonic Test (UT) inspection on a weld repair previously performed and after the weld cooled to ambient temperature on complete-joint penetration (CJP) weld A5b- Parapet Wall to A5a- Parapet Wall Base plate on the North Tower Chimney Parapet between "Y" Locations (1410 ~ 1510) mm. The NDT was performed in accordance with L & M Industrial Fabricator's Weld Quality Control Plan (WQCP) - ABF Submittal 2510 Rev. 1.

The UT inspection performed on the weld repair area appeared to be in general compliance with L & M Industrial Fabricator's WQCP and the contract specifications.

#### A6 Wall:

This QA Inspector observed L & M Industrial Fabricators Quality Control (QC) NDT Inspector Leo Jim Jr, preparing to perform the NDT Ultrasonic Test (UT) inspection on a weld repair previously performed and after the weld cooled to ambient temperature on complete-joint penetration (CJP) weld A6b- Parapet Wall to A6a- Parapet Wall Base plate on the North Tower Chimney Parapet between "Y" Locations (1318 ~ 1418) mm.

Prior to performing the UT inspection, this QA Inspector observed visually a (22) mm longitudinal linear indication on the weld surface at "Y" Location (1485) mm and QC NDT Inspector Leo Jim Jr. performed magnetic-particle test (MT) inspection and confirmed the longitudinal linear indications' length. The linear indication formed outside of the original repair area at "Y" Location (1318 ~ 1418) mm.

### Turnover with QA Inspector Ken Riley:

This QA Inspector met with QA Inspector Ken Riley who arrived on this date and was given a progress report and status of the welding and inspection activities regarding CCO 196 - Construct Parapet walls around the North, South, East and West Chimneys and CCO 203 - Construct Elevator Internal and External Support Brackets. This QA Inspector also informed QA Inspector Ken Riley regarding the outstanding weld repairs and outstanding

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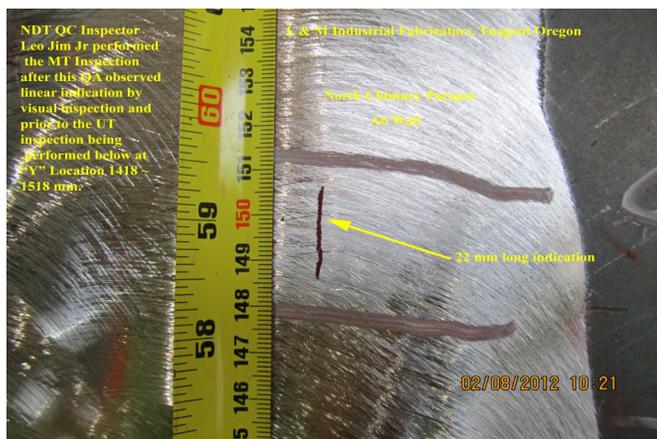
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inspection to be performed on the A6 Wall of the North Chimney Parapet.



## Summary of Conversations:

Only general conversations between QC and QA 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:** Peterson, Art

Quality Assurance Inspector

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**Reviewed By:** Levell, Bill

QA Reviewer