



SAS Superstructure

Location: 04-SF-80-13.2 / 13.9

Client Name: CalTrans

Run date 22-Nov-14

Time 6:49 AM

Daily Diary Report by Bid Item

Contract No.: 04-0120F4

Diary #: 1256 Const Calendar Day: 829 Date: 11-Sep-2014 Thursday

Inspector Name: Brignano, Bob Title: Transportation Engineer

Inspection Type:

Shift Hours: Break: Over Time:

Federal ID:

Location:

Reviewer: Schmitt, Alex Approved Date: Status: Submit

04-0120F4
04-SF-80-13.2/13.9
Self-Anchored
Suspension Bridge

Weather

Temperature 7 AM 12 PM 4PM

Precipitation Condition overcast early am, then clear

Working Day [checked] If no, explain:

Diary:

Dispute

General Comments

CCO 314, SAMPLING AND TESTING A354 GRADE BD MATERIAL:

The status of the 2 test rigs in this current phase of the Townsend Test (Test IV) is as follows:
Rod 18 (Dry 2008 Rod, ID S1-A7, Bottom): Tensioned to Failure Today (after ~6 days @ 0.85 Fu)
Rod 19 (Dry 2008 Rod, ID S2-H6, Bottom): Tensioned to Failure Today (after ~6 days @ 0.85 Fu)

ABF Engineer Kelvin Chen is working part time in the field and office on CCO 314. ABF safety manager Ed Fuqua is present at the start of the TR 18 pull to failure operation.

There is work in the field for the scheduled jacking step (pull to failure) at TR's 18 & 19. Crews at the Pier 7 warehouse are working an 8-hour shift 0700 through 1530. Working on the CCO operation today are Ironworker Jared Garrett (~0700~1000 for ~3 hrs) and Laborer Carlos (Pedro) Garcia (~0700~1000 for ~3 hrs). The non-CCO 314 operations elsewhere at the Pier 7 warehouse area at other times in the day are not covered by this diary.

Dave Van Dyke, Rob Rutledge, and Pamela Wallace from VGO start on site at 0700. They start the day by producing the morning data reports and preparing the trailer for the drive back to Oregon now that the last of the testing is complete. They position the VGO pickup truck to haul the trailer and pack items into the back of the pickup truck and into the trailer. For the pull to failure operations today, only Dave is actively involved in the live monitoring of the forces and displacements, while Rob and Pamela are primarily working to prepare the equipment for the trip back to Oregon. After each rod is pulled to failure, Dave works on the final data reports while Rob and Pamela dismantle the VGO instrumentation at the test rig. After completion of both pull to failure operations, the eDAQ is disconnected and packed for the trip. VGO leaves site approximately 1030 after completing all testing for the day, dismantling all of the VGO instrumentation, and packing all the gear. Rob and Pamela drive the truck with the trailer back to Oregon, working late to complete the drive back to Oregon this evening. Dave flies out later in the day, and he also works offsite later in the day to complete the final data reports from today.

The ironworker and laborer start the day prior to the scheduled pull to failure operation by dismantling the fence to the south of the test rigs that had enclosed the test rigs. The pull to failure operation is scheduled to start approximately 0800 this morning to give CT-METS AE personnel and DJV personnel time to be on site and ready for the operation.

Test Rig #18 (Dry 2008 Rod, ID S1-A7, Bottom) Jacking Step:

This is the 11th jacking step and the rod is being jacked to failure after being at 0.85 Fu for 6 days. The tension on the rod at the start of the operation is 706 kips (the 0.85 Fu load left on the rod 6 days ago was

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712 kips for a delta of -6 kips), with this tension difference possibly due to thermal differences between 9/5/2014 and today). Present from the DJV is Luis Funes. Present from CT-METS for AE is Elijah Turner (communicate with Mistras personnel offsite) and Scott Croff is also present. The ABF ironworker is present to operate the pump for the pull to failure operation, while the laborer continues work on dismantling the fence and doing miscellaneous cleanup. VGO is present to monitor the loads being used to guide the operations. The planned loading rate is approximately 1 kip per 3 seconds. The planned starting hydraulic pressure is 5,700 psi to match the jacking pressure prior to locking off the load for the last load step. Jacking starts at 0757. At 5,700 psi hydraulic pressure per the dial gauge, the primary strain gauges give a force of 776 kips. Then the needle valve is tightened down to near negligible hydraulic fluid flow, the pump valve is opened up, and the needle valve is slowly opened up until the desired loading rate is achieved. The needle valve is periodically adjusted when the load rate needs adjusting. The rod breaks at a force per the primary strain gauges of 973 kips (1.16 Fu) at 0806. This is approximately 143 hours at 0.85 Fu.

After the fracture of the TR 18 rod, the first fracture surface preservation steps are performed by CT-METS and me. The steps, per the approved procedure are water rinse, dry, alcohol rinse, dry, and WD-40. Meanwhile, the ironworker and laborer partially dismantle the TR 18 setup so that the second fracture surface can be extracted from inside the TR box – remove south tent end, remove wire rope on south traffic plate, remove south traffic plate, remove south end plate, pull the rod assembly to the south, and unthread the test rod from the coupler. After the second fracture surface is extracted, the fracture surface preservation steps are performed by CT-METS and me. Meanwhile, the ironworker and laborer continue to dismantle the TR 18 setup – remove wire ropes at the south k-rail, remove sandbags from between the pair of south k-rail, remove the south wedged steel plate from between the pair of k-rail, and remove the south k-rail. The fracture surfaces are taken to the CT-METS air-conditioned (dehumidified) office for storage until they are sent to a lab for post-fracture analysis. Then the pull to failure operation begins at TR 19.

Test Rig #19 (Dry 2008 Rod, ID S2-H6, Bottom) Jacking Step:

This is the 11th jacking step and the rod is being jacked to failure after being at 0.85 Fu for 6 days. The tension in the morning the same time the tension is noted for TR 18 at the start of the pull to failure operation on that other rod is 710 kips (the 0.85 Fu load left on the rod 6 days ago was 716 kips for a delta of -6 kips), with this tension difference possibly due to thermal differences between 9/5/2014 and today). Then, the tension on the rod at the start of the pull to failure operation for TR 19 is 712 kips, with this different tension ~1.5 hours later being due to thermal. Present from the DJV are Luis Funes and Hayat Tazir. Present from CT-METS for AE is Elijah Turner (communicate with Mistras personnel offsite). The ABF ironworker is present to operate the pump for the pull to failure operation, while the laborer continues work on miscellaneous cleanup at the TR's. VGO is present to monitor the loads being used to guide the operations. The planned loading rate is approximately 1 kip per 3 seconds. The planned starting hydraulic pressure is 5,700 psi to match the jacking pressure prior to locking off the load for the last load step. Jacking starts at 0929. At 5,700 psi hydraulic pressure per the dial gauge, the primary strain gauges give a force of 773 kips. Then the needle valve is tightened down to near negligible hydraulic fluid flow, the pump valve is opened up, and the needle valve is slowly opened up until the desired loading rate is achieved. The needle valve is periodically adjusted when the load rate needs adjusting. The rod breaks at a force per the primary strain gauges of 965 kips (1.15 Fu) at 0934. This is approximately 144 hours at 0.85 Fu.

After the fracture of the TR 19 rod, the first fracture surface preservation steps are performed by CT-METS and me. The steps, per the approved procedure are water rinse, dry, alcohol rinse, dry, and WD-40. Meanwhile, the ironworker and laborer partially dismantle the TR 19 setup so that the second fracture surface can be extracted from inside the TR box – remove south tent end, remove wire rope on south traffic plate, remove south traffic plate, remove south end plate, pull the rod assembly to the south, and unthread the test rod from the coupler. After the second fracture surface is extracted, the fracture surface preservation steps are performed by CT-METS and me. The fracture surfaces are taken to the CT-METS air-conditioned (dehumidified) office for storage until they are sent to a lab for post-fracture analysis.

The TR19 rod extraction is completed about 1000, and then the ironworker and laborer then take their



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morning break. All the work that needs to be completed today (both pull to failure operations and all fracture surfaces removed from the TR's), so ABF then moves to other higher priority work elsewhere at the Pier 7 warehouse area and does not come back to CCO 314 work after the morning break. The remaining dismantling of the 2 test rigs will happen on later dates as lower priority work.

In the afternoon, Elijah Turner and Scott Croff from CT-METS work at the test rigs to pull the AE wiring – both the wire runs from the data logger to the test rigs and the power cord and network cable from the data logger to the BayView Trailer. When they are complete with this work, all the AE instrumentation gear (wires, sensors, etc) is secured in the toolbox that CT-METS used to store and protect the data logger.

A 40kW generator – MQ Power 40 – ABF ID 002051 is used briefly for the jacking operations and is on idle/standby at the test rig work area the remainder of the day. A Hydraulic Pump for running the jacks is used briefly for the jacking operations and is on idle/standby at the test rig work area the remainder of the day. An extendable forklift (Gradall 544D - ABF ID 002005) is used by the ironworker. A Kubota Cart is used by the Laborer. A compressor (IR185 - ABF ID 002039) is brought to the test rig site today, is used briefly to run an air gun to unbolt the test rig end plates, and is on idle/standby at the test rig work area the remainder of the day.

Note that there is k-rail at this work area. All the remaining k-rail at the CCO 314 test rig site is State owned. There are 20 pieces of 10' bought k-rail. Of the 20 pieces, 16 are installed in test rigs and 4 are spare/extra k-rail.

To elevate k-rail and sandbags, crane mats (built from 12x12's) and timber blocking (12x12's) are used. The crane mat and 12x12's quantities are as follows:

1 each 4'x20' crane mat (1 x 80 LF)
1 each 5'x19' crane mat (1 x 95 LF)
2 each 5'x20' crane mats (2 x 100 LF)
2 each 5'x16' crane mat (2 x 80 LF)
~64 LF additional 12x12's
Total 12x12's quantity = 599 LF ~ 600 LF

The agreed extra work with ABF is as follows:

Ironworker Jared Garrett - 4 hrs
Laborer Carlos (Pedro) Garcia - 2 hrs
Engineer Kelvin Chen - 1 hr
40kW Generator - 0.5 hrs
Kubota Cart - 2 hrs
Extendable Forklift - 3 hrs
12x12 timber - 600 LF
See the attached Extra Work Order - Signed with ABF for CCO 314 work

INSPECTOR OT REMARK:

Office 2 hours: ABF is working a shift at the Pier 7 warehouse area between 0700 and 1530, and I am in the field all morning and for a portion of the afternoon for the TR's 18 & 19 pull to failure operation, fracture surface preservation steps, and various issues related to the dismantling of the test rigs. I am also in the office for various work related to A354 Grade BD bolts and rods. I work later in the afternoon to summarize and report information on the operations today. My shift is 0700 to 1730 and my OT is 1530 to 1730.

