Daily Diary Report by Bid Item

Contract No.: **04-0120F4**
Diary #: **542** **Const Calendar Day:** 935 **Date:** **31-Mar-2012** **Saturday**
Inspector Name: **Bruce, Matt** **Title:** **Transportation Engineer**
Inspection Type: Intermittent
Shift Hours: 03:30 am 12:00 pm **Break:** 00:30 **Over Time:** 08:00
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** 40 - 50 **12 PM** 50 - 60 **4PM** 50 - 60
Precipitation 0.66" **Condition** Overcast w/extremely high winds and rain

Working Day ☐ If no, explain:

Diary: Dispute ☐

Work description.

- John Lyons, Sami Dauok, Damon Brown, Phil Latasa, and myself checked the out to out distance for the cable strands today as Damon's and my measurements are tabulated below. Damon and I were responsible for both the north/south sidespans. Damon assisted me with the measurements and tabulating the data as I took all of the measurements unless otherwise noted. I used the Victor Tree Gauge (#2) to take the out to out measurements of the cable strands. Sami and Phil were responsible for checking the north/south mainspans and west-loop today.

All measurements by both crews were reported to John who was stationed in the Caltrans conex recording and analyzing the data. When all of the measurements were completed, John was responsible for reviewing the measurements with ABF engineer Zach Lauria. See John's diary for more details related to the acceptance or rejection of cable strand sag adjustment.

The digital thermometer was used to measure both the ambient and steel temperatures. The green dual thermometer and anemometer was used to check the ambient temperature and wind speed. The steel temperature measurements were taken with the digital thermometer placed on the outer cable strand wires. Wind speeds were also obtained from weather.com at the time of the measurements.

The official sunrise time per weather.com for San Francisco today was at 6:56am. The following measurements were taken of the relative sag from cable strand number 1 at the given times below:

// South Sidespan //
Time = 4:38am
Ambient Temperature = 56.2F
Condition = Cloudy
Wind = S @ 18mph to S @ 35mph
ABF Surveyor(s) = James Allen and Ken Woon
Caltrans Engineer(s) = Matt Bruce and Damon Brown

Cable Strand (mm)	Steel Temperature (F)	O-O (#2) CT / ABF (mm)	Theor (mm)	CT Delta
1	57.3	Baseline or Zero	78	0
123	57.0	859 (-61) = 798 / 797	826	- 28
123*	57.0	871 (-61) = 810 / 815	826	- 16
123*	57.0	885 (-61) = 824 / 835	826	- 2
124	57.0	929 (-61) = 868 / 875	893	- 25
124*	57.0	947+15 (-61) = 901 / 904	893	+ 8

125	57.0	640 (-61) = 579 / 570	559	+ 20
125*	57.0	617 (-61) = 556 / 560	559	- 3

Comments: All cable strands were considered to be free-hanging at the time of measurement on the south sidespan. I took all of the measurements while Damon assisted me with setting up the targets, being level, normal to cable, etc. A timber block was used on cable strand number 1 to obtain measurements where the dimension is in ( ) millimeters. Cable strand number 126 was floated at the time of measurements.

Immediately after preliminary measurements were taken on the cable strands on the south sidespan ABF began "Live-Adjustment". Once the cable strand was adjusted ABF surveyors would take a measurement followed by Caltrans engineers. Numbers amongst the two groups were compared to expedite final buy-off. Cable strand numbers with an * next to it denote that the cable strand was measured after "Live-Adjustment". It should be noted that due to the high wind speeds it was difficult to measure the cable strands. However the cable strand "stack" helped keep the strands from oscillating completely out of control as seen in the past. Cable strand oscillations were estimated at a range of +/- 3mm, +/-5mm, to +/-10mm at the time of measurements.

The following is a summary of the cable strand release at the tower inspected by Daryoush Bahar where the calculated numbers were based off of my measurements:

CS#	Calc. Req Length at Tower (mm)	Meas. Length at Tower (mm)	Meas. Sag at Midspan (mm)
123	3.11-East	3-East	2.89-East
124	2.78-East	2-East	3.67-East
125	2.22-West	4-West	2.56-West

This table is a cross check using the theoretical sag ratio on the south side span of 1:9 to confirm measurements at the midspan.

// North Sidespan //
Time = 6:32am
Ambient Temperature = 57.0F
Condition = Cloudy
Wind = S @ 30mph to S @ 42mph
ABF Surveyor(s) = James Allen and Ken Woon
Caltrans Engineer(s) = Matt Bruce and Damon Brown

Cable Strand (mm)	Steel Temperature (F)	O-O (#2) CT / ABF (mm)	Theor (mm)	CT Delta
1	58.2	Baseline or Zero	78	0
123	57.7	894 (-61) = 833 / 824	829	+ 4
124	57.7	939 (-61) = 878 / 864	894	- 16
124*	57.7	967 (-61) = 906 / 908	894	+ 12

Comments: All cable strands were considered to be free-hanging at the time of measurement on the north sidespan. I took all of the measurements while Damon assisted me with setting up the targets, being level, normal to cable, etc. A timber block was used on cable strand number 1 to obtain measurements where the dimension is in ( ) millimeters. Cable strand number 126 was floated at the time of measurements.

Immediately after preliminary measurements were taken on the cable strands on the north sidespan ABF began "Live-Adjustment". Once the cable strand was adjusted ABF surveyors would take a measurement followed by Caltrans engineers. Numbers amongst the two groups were compared to expedite final buy-off. Cable strand numbers with an * next to it denote that the cable strand was measured after "Live-Adjustment". It should be noted that due to the high wind speeds it was difficult to measure the cable strands. Cable strand oscillations were estimated between +/- 10mm and +/-15mm. During the measurement the strand was measured in between oscillations where the strand would undergo different cycles of excitement.

The following is a summary of the cable strand release at the tower inspected by Daryoush Bahar where the calculated numbers were based off of my measurements:

CS#	Calc. Req Length at Tower (mm)	Meas. Length at Tower (mm)	Meas. Sag at Midspan (mm)
124	1.77-East	No movement (?)	3.11-East

This table is a cross check using the theoretical sag ratio on the south side span of 1:9 to confirm measurements at the midspan.

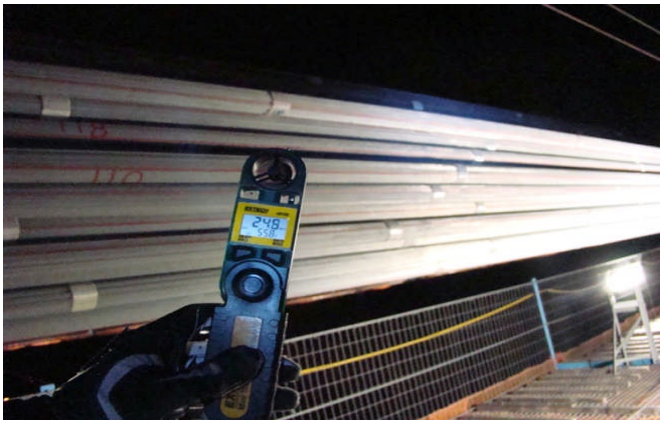
- All of the prescribed measurements for the sidespans were completed at 6:50am and conveyed to John. As mentioned in the comments section of the measurement tabulations, live adjustments were performed by ABF ironworkers. An adjustment would be made and then ABF surveyors and Caltrans engineers would measure the cable strand to verify the correct sag adjustment was done before moving on to adjusting another strand.

Both crews of ironworkers at the east anchorage and tower saddle began their shift at 5:00am respectively. See Daryoush Bahar's diary for comments, measurements, labor, and equipment at the tower saddle. See Bob Brignano's diary for comments, measurements, labor, and equipment at the east anchorage.

- Continued to review the plans and submittals related to the cable bands. Continued to develop the inspection checklist for this item of work.

- Wrote outstanding diaries and completed cable strand adjustment check sheets for this week.

Attachment



A wind speed of 25mph was recorded w/the green anemometer on the south sidespan at the time of measurements.

A wind speed of 34mph was recorded w/the green anemometer on the north sidespan at the time of measurements.