



SAS Superstructure

Location: 04-SF-80-13.2 / 13.9

Client Name: CalTrans

Run date 21-Nov-14

Time 11:24 PM

Daily Diary Report by Bid Item

Contract No.: 04-0120F4

Diary #: 541 Const Calendar Day: 934 Date: 30-Mar-2012 Friday
Inspector Name: Bruce, Matt Title: Transportation Engineer
Inspection Type: Intermittent
Shift Hours: 03:30 am 02:00 pm Break: 00:30 Over Time: 02:00
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 0.00" Condition Overcast

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 John'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 6:57am. The following measurements were taken of the relative sag from cable strand number 1 at the given times below:

// South Sidespan //

Time = 4:31am

Ambient Temperature = 53.4F

Condition = Cloudy

Wind = SE @ 4mph

ABF Surveyor(s) = None at this time

Caltrans Engineer(s) = Matt Bruce and Damon Brown

Table with 5 columns: Cable Strand (mm), Steel Temperature (F), O-O (#2) CT / ABF (mm), Theor (mm), CT Delta. Rows include strand 1, 121, and 122 with their respective measurements.

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,



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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 123 was floated and the south socket for 124 was stopped at the north end of the W2 cap beam just before the secondary hauling system.

The length of adjustment at the tower saddles was to be 1-East for CS#121 and 3-East for CS#122. This information was conveyed to Daryoush Bahar who was at the tower saddle during "Live-Adjustments".

// North Sidespan //

Time = 4:48am

Ambient Temperature = 53.0F

Condition = Cloudy

Wind = SSE @ 5mph

ABF Surveyor(s) = James Allen and Ken Woon

Caltrans Engineer(s) = Matt Bruce and John Lyons

Cable Strand (mm)	Steel Temperature (F)	O-O (#2) CT / ABF (mm)	Theor (mm)	CT Delta
1	54.1	Baseline or Zero	78	0
120	53.0	751 (-61) = 690 / 695	635	+ 55
121	53.0	792 (-61) = 731 / 735	700	+ 31
121*	53.0	762 (-61) = 701 / 700	700	+ 1
122	52.8	881(-61) = 820 / 826	765	+ 55
122*	52.8	806 (-61) = 745 / 751	765	- 20
122*	52.8	830 (-61) = 769 / 765	765	+ 4

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 all of the measurements where the dimension is in () millimeters. Cable strand number 123 was floated and 124 was in the rollers.

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".

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)
120	6-West	Not available at this time	Not available at this time
121	3-West	4-West	3-West
122	6-West	8-West + 1-East = 7-West	8-West + 3East = 5West

This table is a cross check using the theoretical sag ratio to confirm measurements at the midspan. ABF ironworkers were having a difficult time installing the strand grips on CS #120 during the "Live-Adjustment" due to the configuration of adjacent strands. See Daryoush's diary for more details regarding this issue. Therefore cable strand 120 on the north sidespan was abandoned for the time being to keep moving prior to the 7:00am deadline or start of shift.

// South Sidespan //

Time = 6:17am

Ambient Temperature = 53.0F

Condition = Cloudy

Wind = S @ 5mph

ABF Surveyor(s) = James Allen and Ken Woon

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Cable Strand (mm)	Steel Temperature (F)	O-O (#2) CT / ABF (mm)	Theor (mm)	CT Delta
1	53.4	Baseline or Zero	78	0
121	53.0	737 (-61) = 676 / 677	692	- 16
121	53.0	742 (-61) = 681 / 680	692	- 11
121	53.0	762 (-61) = 701 / 696	692	+ 9
122	53.0	815 (-61) = 754 / 750	759	- 5

Comments: All cable strands were still 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.

Measurements on the cable strands at this time were done immediately after ABF ironworkers performed a real time or "Live" adjustment on the cable strand. 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.

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)
121	1-East	3-East	3-East
122	3-East	3-East	3-East

// North Sidespan //

Time = 6:58am

Ambient Temperature = 52.9F

Condition = Cloudy

Wind = SE @ 6mph

ABF Surveyor(s) = James Allen and Ken Woon

Caltrans Engineer(s) = Matt Bruce and John Lyons

Cable Strand (mm)	Steel Temperature (F)	O-O (#2) CT / ABF (mm)	Theor (mm)	CT Delta
1	53.4	Baseline or Zero	78	0
120	53.4	666 (-61) = 605 / 601	635	- 30
120	53.4	713 (-61) = 652 / 646	635	+ 17

Comments: Cable strand number 120 was still considered to be free-hanging at the time of measurement on the north sidespan. I took the measurement 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 the measurement where the dimension is in () millimeters.

Measurements on the cable strands at this time were done immediately after ABF ironworkers performed a real time or "Live" adjustment on the cable strand. 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.

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)
120	6-West	10-West + 12-East	9-West + 5-East = 4West



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+ 8-West = 6-West

- All of the prescribed measurements for the sidespans were completed at 7:50am and conveyed to Alex. Due to the dangers on the catwalks during the regular shift with floating cable strands Zach called everyone off of the catwalk despite the delta for cable strand 120. 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.

- Attended the weekly OBG staff meeting at 8:30am.

- Continued to review the plans and submittals related to the cable bands. Continued to develop the inspection checklist for this item of work. Myself and Tai-Lin Liu went to the warehouse to check the cable bands being stored in this location, see photos below for more details.

- Wrote outstanding diaries and cable strand adjustment check sheets.

Attachment



Suspender rope grooves seen on the mock cable band in the Pier 7 warehouse.



ABF ironworkers seen from the north sidespan midpoint struggling while installing the adjuster grips on cable strand 120 near the tower saddle.



Cable band certificate of compliance and orange tag.



East end cable bands halves which will be fixed to the OBG.

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Cable work on the west end of the W2 cap beam and the progress of E-Line YBITS bridge falsework and formwork by MCM.



Mock cable band and wrapping machine placed on a steel pipe in the Pier 7 warehouse.



Cable bands stored in the Pier 7 warehouse and wrapped up with inspection tags taped on the wrapping.



Mock cable band placed on a steel pipe in the Pier 7 warehouse.



Identification stamps seen on the mock cable band in the Pier 7 warehouse.



Cable band certificate of compliance and blue tag.

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Mock cable band and wrapping machine placed on a steel pipe in the Pier 7 warehouse.