STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

ASSISTANT RESIDENT ENGINEER'S DAILY REPORT

CEM 4601 (REV 4/1999) CT# 7541-3504-6

CCO 106, EWB 0015 - Paid
0021 - Paid

JOB STAMP

04-0120F4

04-SF-80-13.2/13.9

SFOBB-SAS

Report No. 7

Date 9/15/09

S M (T) W T F S Circle Day

Shift Hours Start 2000 9/15/09 Stop 0430 ~~0400~~ 9/16/09

ASSISTANT RESIDENT ENGINEER'S DAILY REPORT

Location & Description of Operation CCO 106 Skyway Lowering

ABF ironworkers work regular time. ABF surveyors (4 + superintendent - Allen, Andre, Dennis, Roberts, Adams) work a special shift on OT - 8 hrs. OT ea & 10 hrs. OT for sup. Adams - See David Bradd Diary. ABF general superintendent Jerry Kent is present for the first few hours of the operation. ABF Safety officer Allen McDonald is present for the entire night shift. ABF junior field engineer Eric Blue is present for recording jack pressure and other measurements.

WEATHER: Clear 55-60 °F

EQUIPMENT AND / OR LABOR:

EQPT. NO.	NO. PERSONS	DESCRIPTION (Of Equipment or Labor)	CCO 106 - Lowering							IDLE OR DOWN	REMARKS (Reason for Idleness or other remarks)
	5	Ironworkers	8								Carlos Valverde, Steve Batiste, Darryl Webb, Josh Galvin, Gabriel Rios
	1	Ironworker Superintendent	8								Dave Meche
		Pickup Trucks (9 ea.)	8								9 ea. for ABF - 2 for iw's, 1 for iw sup, 2 for surveyors, 1 for survey sup, 1 for Jerry Kent, 1 for Safety officer, 1 for engineer.
002054, 002072		Light Plants	8								Two light plants - Genie TML-4000N
002083		Welding Machine	8								Lincoln Electric Vantage 500
000008		Generator	8								MQ Power 25
		Hydraulic Pumps	8								Two Power Team Pumps
Crane Barge #1		Crane Barge								8	Crane not being used @ night

ABF barge and crane are not used for this night work - access is via Skyway in pickup trucks and no material deliveries by crane to Skyway - crane is not used, no operators on site @ night. Shift started @ 20:00 at Pier 7. Liftoff & Survey in stages down to PGL. Prior to reaching PGL, the Skyway became a free cantilever and would not go down any further @ 53 mm from PGL. Consulting DJV representative John Denis on site, we raised the structure approx. 1" to put a force on the structure. Final position is 81mm above PGL. Done with jacking @ 2330. See attached email with details of elevation survey and lift off forces for lowering stages. Then ABF surveyed 16 points and ABF ironworkers tack welded shims and wood wedged the shear keys tight to the steel skyway.

PRINT NAME	SIGNATURE	TITLE
Bob Brignano	Bob Brignano	TE

'12 JUN 1 PM 3:26 19918

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Bob Brignano/D04/Caltrans/CAGov

09/16/2009 04:44 AM

To: george.baker@tylin.com, pchou@chousimage.com, jadenis@comcast.net, jduxbury@tylin.com, mnader@tylin.com

cc: Brian Boal/D04/Caltrans/CAGov@DOT, David Bradd/D04/Caltrans/CAGov@DOT, Alex Schmitt/D04/Caltrans/CAGov@DOT, Laraine Woo/D04/Caltrans/CAGov@DOT

bcc:

Subject: EB Skyway Lowering Info

The lowering of the EB Skyway happened the night starting Tuesday 9/15/09.

The main issue with the work is that we lowered it as much as it would go under its self weight and did not reach profile grade. When we were about 2 inches higher than profile grade target, the Skyway structure was a free cantilever. So that it would not be left as a free cantilever, we shimmed it up by an inch from that free cantilever condition. It now sits 81 mm higher than PGL. At the bottom of this email, I have the survey elevations and forces tabulated.

Another issue is the movement of the bridge in other directions. We expected a transverse movement and got 4 to 5 mm to the south (the low side). It also moved longitudinally by 24 to 25 mm to the west. The problem is that a benchmark (Sky 2) near Pier E3 on the EB structure also moved - it went down by 8mm and also moved horizontally (northing delta is 12 mm and easting delta is 5 mm - sorry I did not get a direction, but based on how the tip moved, I think I know which direction this point moved). That benchmark is on the barrier rail a little west of Pier E3, not perfectly centered on the pier. For the lowering work at the EB structure this was not a problem because the surveyors worked from a benchmark (Sky 3) near Pier E3 on the WB structure that was unaffected by tonight's lowering operation. The problem is that they planned to use that benchmark (Sky 3) near Pier E3 on the WB structure for surveying during/after the WB structure lowering. If that benchmark is affected by the lowering operations, then some more work will be needed. There are solutions - this might involve working Thursday night or Friday day to check some of the points on the WB structure or check the benchmark. Working from a revised benchmark (Sky 2) near Pier E3 on the EB structure apparently will not work because it is not well located relative to the other points to check.

Attached is a scan showing some points from the night time survey from a few weeks ago in black and the new survey results in red. Comparing the numbers gets the 4 to 5 mm south translation, the 24 to 25 mm movement to the west, and the 81 mm above PGL.

Skyway_Eastbound_Lowered_2009.09.15_Summary.pdf

We will not get the results of the survey of all 16 points for a few days.

LOWERING FORCES AND ELEVATIONS:

ABF tabulated the gage pressures, but I do not know when we will get forces and other data from ABF. ABF and I took independent reading off the gages and we read those numbers slightly differently. Also, ABF's engineer planned to get forces graphically off the calibration charts, and I am doing this differently by calculating forces from the two nearest points on the calibration tables. My point is that my numbers may be slightly different than ABF's but we should be close and this is a good QA check. For now, we only have my numbers. I have the air and steel temperatures recorded at the deck level - the soffit temperatures are essentially the same for zero temperature gradient.

Initial elevation = 48.973
Air = 63F, Steel = 62F
Lift off forces at 20:55 =
NE: 275 k
NW: 276 k
SW: 270 k
SE: 270 k
Total: 1,091 k

Then lower by approximately 4 inches, settling on the shim stack. Note, the shims pulled in this stage were not quite 4 inches. Also, with the south side coming down more, the north side tended to float, so shims were added to the north, so the centerline elevation lowering was not as much as the low-side shim

removal on the south.

Elevation = 48.888 (lowering was 88 mm)
Air = 61F, Steel = 61F
Lift off forces at 22:10 =
NE: 218 k
NW: 220 k
SW: 213 k
SE: 214 k
Total: 865 k

Then lower by approximately 4 inches, settling on the shim stack.

Elevation = 48.791 (lowering was 97 mm)
Air = 58F, Steel = 58F
Lift off forces at 22:40 =
NE: 129 k
NW: 132 k
SW: 130 k
SE: 130 k
Total: 521 k

Then lower by approximately 4 inches, settling on the shim stack.

Elevation = 48.696 (lowering was 95 mm)
Air = 58F, Steel = 58F
Lift off forces at 23:10 =
NE: 47 k
NW: 48 k
SW: 46 k
SE: 46 k
Total: 187 k

Then attempted lowering approximately 4 inches. This was the planned final large lowering increment with final grade adjustments (could have been slightly up or down) necessary as a next step. However, the EB Skyway lowered about half way and then was a free cantilever. We had approximately 2" gaps at the four corners, and we were about 2" from reaching PGL. The gaps varied for each of the 4 locations and gap measurements at different areas (four corners of leveling plate on the OBG) were slightly different.

Elevation = 48.631 (lowering was 55 mm)
Air = 58F, Steel = 59F
Force = 0 k -> free cantilever

So as to not leave the structure as a free cantilever, we shimmed tight and then added 1" of shims, raising the structure slightly from the free cantilever position. Final surveys were performed in this 1" raised from free cantilever position. Final Elevation = 48.659, which is raised 28 mm from the previous free cantilever position. The target PGL = 48.578, so the structure is 81 mm high.

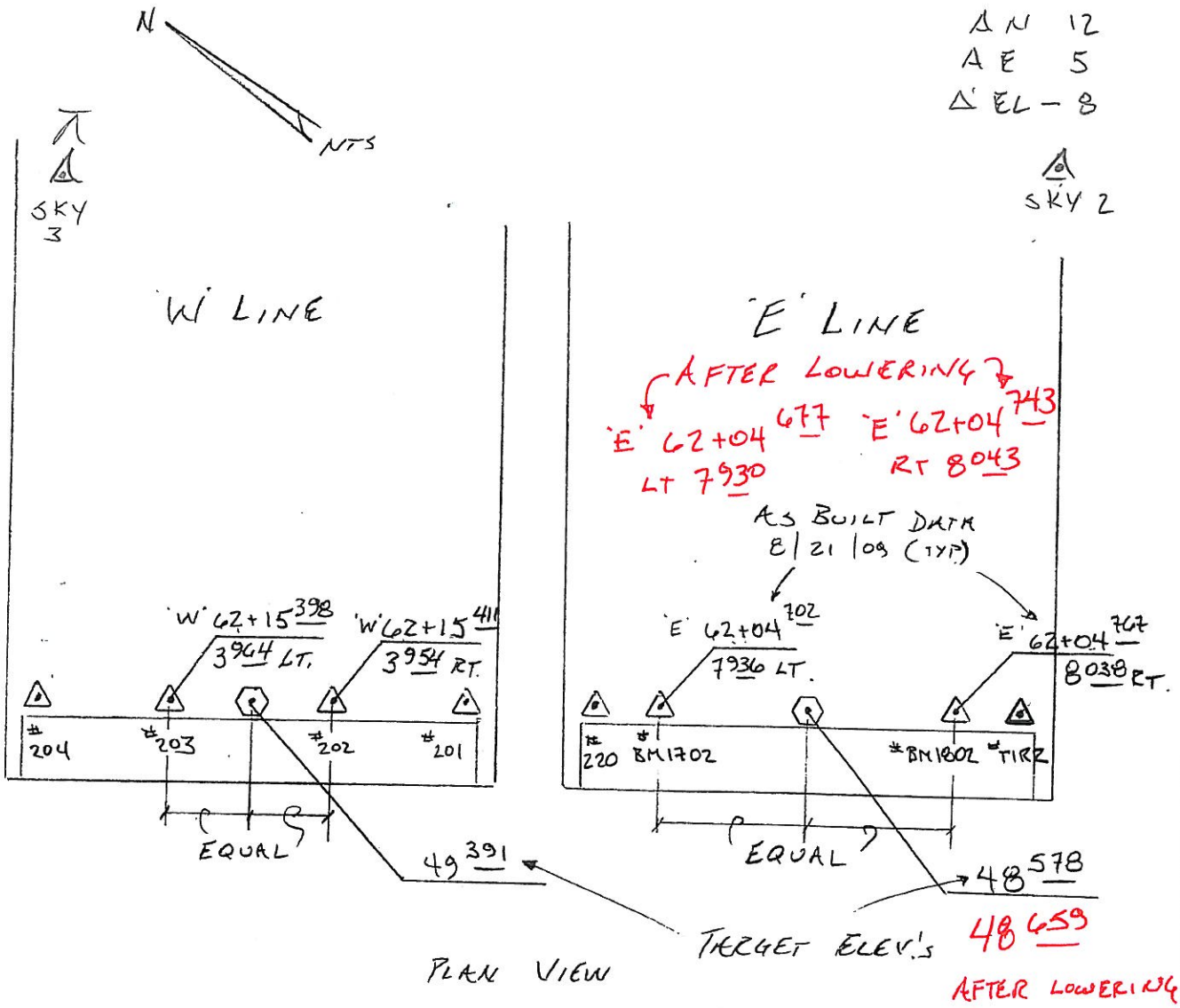
We also measured shim heights before lowering and after the final condition (with 1" of shims above free cantilever) as follows:
NE: 1240 mm initial - 940 mm final = 300 mm lower
NW: 1295 mm initial - 980 mm final = 315 mm lower
SW: 1055 mm initial - 755 mm final = 300 mm lower
SE: 1015 mm initial - 710 mm final = 305 mm lower
Note that these initial shim heights are after the reconfiguration. These were slightly higher and slightly lower than the original shim condition during the nighttime survey from a few weeks ago. The initial shim condition is at the same time as the initial survey at the start of the night's work. Adding the lowering from the stages, we get 88 + 97 + 95 + 55 - 28 = 307 mm lowering, which is close to what we got for changes in shim heights at the four jacking points.

CCO #106 SKYWAY
LOWERING TARGET
ELEVATIONS

American Bridge / FLUOR
A JOINT VENTURE

PROJECT

SHEET ____ OF ____ DATE 9/15/09



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
Form HC-10A (Rev. 6/80)

CCO 106, EWB 0015 - Paid

Job Stamp
04-0120F4
SFOBB SAS

Const. Calendar Day No. 7
Project Work Day No. 217
Date **Tuesday 9/15/2009**

Shift Hours Start 2000 Stop 04:00

ASSISTANT RESIDENT ENGINEER'S **CONTRACTOR – ABFJV**

EQUIPMENT AND/OR LABOR:

Equip. #	NO. MEN	DESCRIPTION (Of Equipment or Labor)	HOURS - ITEM NO. CCO 106									IDLE OR DOWN	REMARKS Class	REMARKS Contractor
		Adams, David	8.0 OT										Surveyor, Party Chief	ABF
		Allen, JV	8.0 OT										Surveyor, Party Chief	ABF
		Anders, RG	8.0 OT										Surveyor, A2	ABF
		Dennis, Teri	8.0 OT										Surveyor, Party Chief	ABF
		Roberts, CB	8.0 OT										Surveyor, A2	ABF
		Newton, Harlow	8.0 OT										Safety	ABF

- **Contractor surveyed monitoring points on the EB transition structure at Hinge A during and after the lowering operation of the structure. Work began at 20:00, September 15, 2009, and ended at 04:30, September 16, 2009.**

David Bradd, Assistant Resident Engineer

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

ASSISTANT RESIDENT ENGINEER'S DAILY REPORT

CEM 4601 (REV 4/1999) CT# 7541-3504-6

CCO 106, EWB 0014 - Paid
0021 - Paid

JOB STAMP

04-0120F4
04-SF-80-13.2/13.9
SFOBB-SAS

Report No. 7
Date 9/15/09
S M (T) W T F S Circle Day
Shift Hours Start 0700 Stop 1200

ASSISTANT RESIDENT ENGINEER'S DAILY REPORT

Location & Description of Operation: CCO 106 Skyway Lowering

ABF ironworkers work 0700 to 1200, but by union rules are paid minimum 6 hours for working. Operators do not service CCO 106 in the afternoon, but there is no other work for them and they are charged to the CCO. To prep for the night work lowering, the ironworkers lower the shear keys from the inclined intermediate position, take lights to field, and make sure all materials and equipment are available. The shop ironworkers cut timbers that will be used for the lowered shear keys to wedge tight against the Skyway. The surveyors check all the points that will be surveyed during and after lowering. At the end of the shift, the ABF ironworkers (5 of them) are in one pickup truck with 3 of them in the bed moving from the WB Skyway to EB Skyway. The Caltrans OTD Safety officer sees this and reports it to the Caltrans SAS safety officer, who reports it to ABF's safety officer.

HOURS - ITEM NO.: CCO 106-Prep for Lowering

WEATHER: Clear

EQUIPMENT AND / OR LABOR:

EQPT. NO.	NO. PERSONS	DESCRIPTION (Of Equipment or Labor)	CCO 106-Prep for Lowering	IDLE OR DOWN	REMARKS (Reason for Idleness or other remarks)
	5	Ironworkers	6		Carlos Valverde, Steve Battiste, Darryl Webb, Gab Rios, Josh Galvin
	3	Operators	8		Doug Green, Jeff Scott, Nick Shafer (4hrs.)
Crane Barge #1		Crane Barge	5	3	No CCO 106 work afternoon
002083		Welding Machine	5	3	Lincoln Electric Vantage 500
000008		Generator	5	3	MQ Power 25
		Hydraulic Pumps		8	Two Power Team Pumps
002054, 002072		Light Plants		8	Two light plants - Genie TML-4000N
	1	~~Dave Meche~~ Ironworker Super.	4		Dave Meche
		Pickup Trucks	5		Two pickups used by ironworkers
	4	Surveyors	3		Jim Allen (3hrs.), Robert Anders (3hrs.), Teri Dennis (2hrs.), C.B. Roberts (2hrs.)
		Survey Trucks	3		Two Survey Trucks
	2	Ironworkers	8		Frank Brajkovich, Rory Hogan (4hrs.)

PRINT NAME: Bob Brignano

SIGNATURE: Bob Brignano

TITLE: TE

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