



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**ENGINEER'S DAILY REPORT**  
LAN Engineering Consultant

*AT* 3-24-2009

REPORT NO.	DATE	
828 {7-day} { + 210 Project Work Day}	March 20, 2009	M T W T <b>F</b> S S (DAY)
NORMAL WORK HOUR:	WEATHER:	
START: 6:00AM STOP: 3:30PM	SUNNY	
LOCATION :	Construction Field Office : 333 Burma Road, Oakland 94607	
	Working Drawing Campus Office : 375 Burma Road, Oakland 94607	

04-SF-80-13.2/13.9  
Contract No. 04-0120F4  
{SAS Superstructure}

Caltrans Supervisor:  
Gary Lai  
Senior Bridge Engineer

**Office Work:**

- ❖ **MEP CCO Weekly Status Meeting – WDC Conference Room 9:00 AM.**
  - Cover all the active CCO's, CCR's and ATP's still in the design / processing phase.
  - Attached is a copy of the previous meeting minutes and added comments this week. See attachment #1.
- ❖ **MEP Meeting (Caltrans – Designers - Contractor) Tuesday March 17, 2009.**
  - Chris Bausone sent out the agenda of the meeting with the recap minutes included for this week's meeting. See attachment #2.
- ❖ **SFOBB Lighting Pole Procurement Meeting – 10:00 AM.**
  - Was invited to a meeting dealing with the lighting pole fabrication and procurement for the SFOBB Bridge. Requested a copy of the Shop drawings and time to review the SAS coordination in this process. Was told an electronic set will be emailed on Monday or next week.
- ❖ **SAS Opportunity Partnering Schedule (OPS) Work.**
  - Chris Bausone (ABF) sent out the meeting agenda and recap minutes of the meeting that took place on March 11, 2009. See attachment #3.
- ❖ **Communication from Team China.**
  - Received a photo from Team China (Gina) for segment 4BW showing twp MEP Penetrations. See attachment #4.

*Any questions or comments you can reach me at (916) 919-7158. My E-Mail address is  
[Mike.Travis@LANEngineering.com](mailto:Mike.Travis@LANEngineering.com) or [Michael\\_Travis@dot.ca.gov](mailto:Michael_Travis@dot.ca.gov)*

**END OF REPORT**

Work hours 0530-1330 – 6 hours regular

**Attachments:**

1. MEP CCO Weekly Meeting Minutes 3.20.2009.
2. Team MEP Meeting 3.10.2009 Recap.
3. SAS OPS Meeting 3.11.2009 Recap Minutes
4. Team China Email with Photo of MEP Penetrations.

**SIGNATURE**

Name

Michael F. Travis

TITLE

Electrical Engineer – LAN Engineering

REC'D 09 MAR 24 10:09:18A

MEP CCO WEEKLY STATUS MEETING NO. 075

March 13, 2009 - 9:00 a.m.

Attachment #1 (1/1)

Attendees:

<input type="checkbox"/> George Dou Gloun (CT)	<input checked="" type="checkbox"/> Andrew Baumberger (TYLan)	<input checked="" type="checkbox"/> Sandra Michelotti (CT)	<input checked="" type="checkbox"/> Tom Ho (TYLan)
<input checked="" type="checkbox"/> Bill Shields (CT)	<input checked="" type="checkbox"/> Scott Fabel (CT)	<input checked="" type="checkbox"/> April Smith (CT) - Author	<input checked="" type="checkbox"/> Sharal (Sam) Patel (CT)
<input checked="" type="checkbox"/> Grady Hart (CT)	<input checked="" type="checkbox"/> James Duxbury (TYLan)	<input checked="" type="checkbox"/> Martin Chandrawansa (CT)	<input type="checkbox"/> Trish Stoops (BATA)
<input checked="" type="checkbox"/> Michael Travis (CT)	<input checked="" type="checkbox"/> Jared Shalunzsa (PB)	<input checked="" type="checkbox"/> Nick King (PB)	<input checked="" type="checkbox"/> Alex Bina (BATA)
<input type="checkbox"/> Hसन Kalan (PB)	<input checked="" type="checkbox"/> Jay Morgan (PB)	<input checked="" type="checkbox"/> Rob Feather (CT)	<input type="checkbox"/> Rob Lalal (CT)

New Business:

Date	Issue	Action	Resolution
3/25/2008	1 TARGET ISSUE SEQUENCE		New sequence of CCOs 55, 61, 70, 75 & 79 Unrepresented include 73, 81, 83, 85 & 94
2/6/2009	4 CCO 42SI - Underground Dist Bank Sections	PB to verify grades and drawing details. CT intercept to show top of W2 wall & invert of blockout.	Survey Possibly today

CCO STATUS

CCO / CCR / MISC	DESCRIPTION	MITG. DATE	ACTIONS	CRM DATE	PRIORITY	DUE DATE	BIC
55	Service Platform Electrical Changes CCR 31 & RFI's 317R0, R1, R2, R3, 418R1, 474R0, 724R0, 1224R0, 1514R0, 501R1, 614, 608, Spec. Change	2/4/09 2/20/09 3/17/09	CRM scheduled for 2/10/09. Bill to send instructions. PB Draft V.4 due date is 4/1/09. Internal CRM scheduled for 3/17/09. PB Draft V.4 due date is 4/1/09.	TBD	B	2/10/09 4/1/09 3/17/09	PB CT
59	Additional OBG Penetrations RFIs 834R0, R1, 1670, 51B 952	12/8/08 12/12/08 1/30/09 2/4/09	Scott to provide an update 12/12/08. CT is pressing ABF to get an ETA for the price matrix from ZPMC. Evaluating ZPMC Price Matrix. Considering inclusion in the Global Change. Sent questions to Sam Choy regarding the Matrix. The Matrix is incomplete.	11/14/2008	A	12/12/08	CT
61	Electrical Warning Systems CCR's 32, 46 & RFI's 402, 873R0, 1314R0 & R1, 1404R3 & 51B 171, Spec. Change  CCR 46 - Additional Fog Detection System, Fog Bell, Horn per USCG. CCR 32 - USCG Requirements for Lighting. Changes as NAV Light 3V 1	1/9/09 1/23/09 1/30/09 2/4/09 2/20/09 3/17/09	PB Draft V.2 is under CT review. Due Date is 01/23/09. PB to provide ETA for Draft V.3 on 01/30/09. PB to provide ETA for Draft V.3 on 02/06/09. PB to submit Draft V.3 on 03/01/09. PB to submit Draft V.3 on 04/01/09. Internal CRM scheduled for 3/17/09. PB Draft V.4 due date is 4/1/09.	TBD	B	1/23/09 1/30/09 2/6/09 3/1/09 4/1/09 3/17/09	PB CT
68	Additional Tower Penetrations RFIs 1029R0, R2, R3	12/5/08 12/12/08 1/30/09 2/4/09	Scott to provide an update 12/12/08. CT is pressing ABF to get an ETA for the price matrix from ZPMC. Evaluating ZPMC Price Matrix. Considering inclusion in the Global Change. Sent questions to Sam Choy regarding the Matrix. The Matrix is incomplete.	11/14/2008	A	12/12/08	CT
70	Tower Utility Panels CCR 42 & RFI's 1134R0, 706R0, 707R1 - R4, Spec. Change CCR 42 - Tower Utility Panel changes, including panels, transformers, circuit breakers	2/8/09 2/23/09	PB to provide ETA on 2/20/09. PB Draft V.3 due date is 5/1/09.	TBD	A	2/20/09 5/1/09	PB
73	Bike Path Conduit RFI 963R0, R1, Spec. Change Unroughly conduit on Skysway & SA5	30/10/08 10/24/08	PB Draft Due Date is 01/28/09. PB Draft V.1 Due Date is 01/20/10.	TBD	C	1/1/09 1/1/10	PB
75	Electrical Grounding CCR 58, RFI 1462R0	12/12/08 12/19/08 1/9/09 2/20/09	CT returned PB Draft on 12/12/08. PB to provide ETA 12/19/08. PB Draft V.2 due date is 2/13/09. PB Draft V.2 due date is 04/03/09. PB Draft V.2 due date is 05/01/09.	TBD	C	12/19/08 2/13/09 4/3/09 5/1/09	PB
79	Tower Base MHP CCR 43 Tower entrance design issued as 1/9m lighting illumination deficiency & grating for ramp pump	1/9/09 1/30/09 2/6/09 2/20/09 2/27/09	PB V.1 Draft Due Date is 02/06/09. PB V.1 Draft submitted 01/23/09. Draft is under CT review. Sam is the lead. CT to return comments for PB Draft V.1 on 2/13/09. Sam is the lead. PB to provide ETA for Draft V.2 on 02/27/09. PB Draft V.2 due date on 06/01/09.	TBD	C	2/6/09 2/13/09 2/27/09 6/1/09	PB
81	TOS Modification RFI 1113R0  Relocation of TOS camera at 14416m to include new locations and new camera.  SCADA changes	1/9/09 1/16/09 1/30/09 2/20/09	PB Draft V.1 due date is 06/30/09. Stop Work Order for the procurement of SCADA to be issued. PB Draft V.1 due date is 06/30/09. Bill to email PB direction to include SCADA changes. PB Draft V.1 due date is 06/30/09.	TBD	C	6/30/09 6/30/09	PB
83	Miscellaneous Mechanical RFI's 738, 1219, 1471, 1404R3 & CCR 80, Spec. Change	3/6/09 3/13/09	Final Concurrence Memo by 03/20/09. Rob. PB Draft V.1 due date is 3/31/09. ATP issued in 05/01/09 40353. Final Concurrence Memo by 03/20/09. Rob. PB Draft V.1 due date is 3/31/09.	TBD	C	3/31/09 3/31/09	PB CT
85	Elevator Details RFI's 536, 731R1, R2, 994, 1161R0 & 51B 233R0, Spec. Change RFI 536 - Systems of SP 10 405 51B 233R0 - Elevator Layouts, Electrical Schematics, and Host Calculations	3/6/09 3/13/09	Discussing whether two (2) additional elevator stops should be added. Meeting scheduled for 03/18/09. Meeting scheduled for 03/18/09.	TBD	B	3/18/09 3/18/09	TYLan CT
94	Bridge Painting & Misc. RFI's 226R0, 447R1, 775R0, 1364R0, Spec. Change Railing, cable handrails, platforms & mac. visible areas	2/27/09	April working with Jeff Ocampo to confirm which changes in the matrix affect ZPMC fabrication.	TBD	C		CT
110	MHP Integration Work	3/6/09	Final PB Package due date is 1/20/10. PB 65% package is under CT review.	TBD	C		CT
CCR STATUS							
31	East Span Light Pole & Luminaires RFI's 159R0, R1		Sored will be at factory next week - Asked for me to attend a meeting in his office @ 10:00AM				
81	Concrete Luminaire Support with Conduit Routing Plan Sheet	2/20/09 2/27/09 3/13/09	PB is working on a detail. Bill to provide formal direction. PB is working on a detail. Due date is 05/01/09. PB to present detail at March 16 meeting.			2/27/09 5/1/09 3/16/09	PB
82	Disconnect for Tower Head Dehumidifier	3/13/09	Significant cost difference if reduce the size of conductors & circuit breakers? A meeting will be scheduled to discuss.				PB

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**Mike Travis**

**From:** Chris Bausone [cbausone@abfjv.com] **Sent:** Fri 3/20/2009 12:13 AM  
**To:** Anna Lee; bernard\_r\_feather@dot.ca.gov; Bill Shedd; Bobby Melvin; Gary J Lai; Grady Hart; Jeffrey Halim; 'John Shen'; Kevin Coyne; Martin Chandrawinata; Mike Travis; Nick King; Ray Meier; Sandra Michelotti; sharad\_patel@dot.ca.gov; syeager@abfjv.com; 'Tom Ho'  
**Cc:** Alex Schmitt; Angel Triunfante; Arlene Wong; 'Brian Petersen (E-mail)'; Carol Choi; 'Dan Hester'; 'Dan Raynor (E-mail)'; Ellery Lucas; George Baker; James P. Duxbury; 'Jim Davidson (E-mail)'; 'Karsten Baltzer (E-mail)'; kmackey@abfjv.com; 'Lou Wehar'; 'Martin Corkill'; Marwan Nader (Marwan Nader); Ramzi; 'Robert Kick (E-mail)'; 'Ron Crockett (E-mail)'; Saeed Shahmirzai; SChoy@abfjv.com; 'Sean Wichman (E-mail)'; 'Stephen Buschmeyer (E-mail)'; 'Thomas Nilsson (E-mail)'; 'tyl-2'; 'tyl-3'  
**Subject:** 3-10-09 MEP mtg Recap  
**Attachments:**  TEAM MEP 03-10-09 Meeting Recap.doc(321KB)

MEP mtg Recap for last week.

Note: I will not be able to attend any meetings next week as I will be out of the office. I defer to Bill Shedd to conduct the general MEP meeting on 3/23, or cancel it. thanks. -C

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**TEAM MEP MEETING**  
**March 10, 2009 Meeting Recap**  
**WDC Conference Room**

**1. OLD BUSINESS:**

- 1.1. Last meeting was on February 17<sup>th</sup>. At that time...
  - 1.1.1. prelim design for electrical enclosure racks was ready for review by TYL/CT, and Pull Box A,B,C,D design was ongoing
    - 1.1.1.1. update?
      - 1.1.1.1.1. PB structural designers rejected the rack design proposed by MEP coordinator for PB. Rack design ongoing
      - 1.1.1.1.2. Pull Box A,B,C,D design ongoing
  - 1.1.2. a meeting was to be coordinated for reviewing SUB-915, barrier shop drawings
    - 1.1.2.1. meeting was held on March 4<sup>th</sup> and all Eastbound Roadway Barrier drawings for Lifts 1-6 were reviewed. Westbound Roadway Barrier was not reviewed due to time consideration but findings at Eastbound were thought to be representative enough for the Engineer to complete a second review
      - 1.1.2.1.1. update?
        - 1.1.2.1.1.1. The Engineer is in process of integrating review comments for Eastbound and Westbound Roadway barriers. A CRM will follow.
  - 1.1.3. CT was to research final grade for earthwork at YBI in vicinity of manholes and verify dimensions for top of manhole shown on Plan Sheet 106R1.
    - 1.1.3.1. update?
      - 1.1.3.1.1. PB advised that they double checked elevations provided on Plan Sheet 106R1 for top of manhole and confirm that the information shall be used. However, PB clarified that "top of manhole" elevations actually refer to top of the precast concrete electrical vault.
      - 1.1.3.1.2. CT plans to double check overall Project Design for final grading requirements in vicinity of electrical vaults, so that length of manholes into the electrical vaults can be anticipated.
  - 1.1.4. MEP Team was supposed to meet for discussions on Opportunity Schedule and develop reports for project directors.
    - 1.1.4.1. discussions have been ongoing and will continue at a meeting to include mechanical/electrical subcontractors on March 11<sup>th</sup>.
- 1.2. February 24<sup>th</sup> mep meeting was cancelled
- 1.3. March 3<sup>rd</sup> mep meeting was replaced by Elevator Design meeting that was to include ABF

1.3.1. ABF was uninvited. CT met with design team for further discussion of design details and application for a variance that will be submitted in the future

1.3.1.1. CT advised that they are pursuing parallel paths in consideration of elevator design decisions for communication (i.e wireless or not). Architectural changes are also being considered and regulating agencies are being consulted in general

1.3.1.2. Next meeting is scheduled for March 18th

**2. RFI STATUS REVIEW AND EVALUATIONS**

2.1. Requests for which ABF is awaiting response

2.1.1. None to report

2.2. Requests returned since 2/17/09

2.2.1. RFI #1616 –proposal to waive hinged railing on x-beams - dated 1/26/09 - ret'd 2/17/09

2.2.2. RFI #1618 – cable tray support mat'l cat'g cut proposals - dated 2/9/09 - ret'd 3/6/09

2.2.3. RFI #1632 – traveler structural tubing material substitution - dated 2/9/09 - ret'd 3/6/09

2.2.4. RFI #1618r1 – cable tray support mat'l cat'g cut proposals - dated 3/2/09 - ret'd 3/5/09

2.2.5. RFI #1666 – cable tray support structural mat'l substitution - dated 3/4/09 - ret'd 3/6/09

2.2.6. RFI #1670 – conflict between conduit penetrations and floorbeam at PP14.5 - dated 3/5/09 – ret'd 3/6/09

2.2.7. RFI #225r3 – Tower Access Safety Issues - dated 3/2/09 – ret'd 3/6/09

**2.3. RFI/CCO EVALUATIONS LEGEND**

(1 = NC = NO CHANGE)

(2 = CCO = CALTRANS TO INCLUDE IN CHANGE ORDER)

(3 = ? = STATUS UNRESOLVED; DEFER TO CORE GROUP FOR EVALUATION)

(4 = OH = ON HOLD PENDING FURTHER REVIEW OR ADD'L INFO)

2.3.1. Recent (or on hold) RFI responses to be evaluated for CCO needs

RFI / EVALUATIONS	ABFJV	CALTRANS	FINAL	CCO #
ABF-RFI-001616R00	4 2	1	4	
ABF-RFI-001618R00	1	1	1	
ABF-RFI-001632R00	1	1	1	
ABF-RFI-001618R01	1	1	1	
ABF-RFI-001666R00	1	1	1	
ABF-RFI-001670R00	2	2	2	55
ABF-RFI-000225R03	2 1	1	1	

2.3.1.1. RFI #1616 should be evaluated by OBG and Contracts groups, but MEP Coordinator has opinion that the character of (detailing and fabrication) work for hinged railing has changed, possibly making it more costly to supply and increasing the lead time to it's delivery.

2.4. Upcoming Requests

2.4.1. none to discuss

**3. MEP SUBMITTALS**

3.1. MEP (or related) Submittals currently under review

- 3.1.1. #695R1 (dated 1/9/09) – Bike path traveler assembly/details - req due date is 1/30/09
- 3.1.2. #751R1 (dated 1/9/09) – SAS-WB traveler assembly/details - req due date is 1/30/09
- 3.1.3. #781R1 (dated 1/9/09) – SAS-EB traveler assembly/details - req due date is 1/30/09
- 3.1.4. #854R1 (dated 1/23/09) – E2/E3-EB traveler assembly/details - req due date is 3/14/09
- 3.1.5. #856R1 (dated 1/23/09) – E2/E3-WB traveler assembly/details - req due date is 3/14/09

3.2. MEP (or related) Submittals returned since 2/17/09

~~3.2.1. none to discuss~~

3.2.2. SUB #938R1 – MEP-Tower Mech. Piping Supports – sub'd 2/20/09 – ret'd 3/2/09 APP

3.3. Upcoming MEP (or related) Submittals

3.3.1. no submittals planned for the next week

4. MISCELLANEOUS

4.1. Ladder & Railing Safety

4.1.1. This generally structural topic is part of the agenda merely because it was assigned to MEP group individuals for action and attention

4.1.2. CT decided to review all information disseminated to the Contractor in regard to ladders and railings in an effort to eliminate conflicting or errant information and strive for consistency overall. They will provide some form of formal communication to confirm or change the pertinent information.

4.2. Change Order 55 developments

4.2.1. CCO (55 and 61) Document review meeting proposed for March 17<sup>th</sup> beginning 10am

4.2.1.1. After further consideration PB/CT decided they are not ready for Contractor input on these CCO Documents.

4.3. Painting of ductile iron pipe - ongoing and expected to finish by end of month.

4.4. ATP for CCO 83 was issued around end of last week

4.4.1. Sketches for changed mech. design at expansion loop under bike path, near Hinge A, were provided to follow-up review comments associated with FWS Working Drawings submittal SUB-112R4.

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**Mike Travis**

**From:** Chris Bausone [cbausone@abfjv.com] **Sent:** Fri 3/20/2009 12:08 AM  
**To:** 'Bill Shedd'; 'Michael Stone'; Mike Travis; 'Mark Woods'; 'Martin Chandrawinata'; 'Bill Farrell'; kbaltzer@abfjv.com; 'Bernard R Feather'; syeager@abfjv.com; 'Anna Lee'  
**Cc:** 'Mike Flowers'; 'Bob Kick'; bpetersen@abfjv.com; 'Jim Davidson'; STudor@abfjv.com; 'Ron Crockett'; 'KSmith@abfjv.com'; 'Stephen V Buschmeyer'; "'PC'"; mcorkill@abfjv.com; 'Sarah Morris'; LWehar@abfjv.com; 'Gary Pursell'; schoy@abfjv.com; 'Kevin Coyne'  
**Subject:** SAS-MEP OppSched Mtg Recap  
**Attachments:**  SAS-MEP OppSched Mtg attends 3-11-09.pdf(211KB)  SAS - MEP OppSched Mtg Recap 03-11-09.doc (370KB)

FYI: Recap of SAS-MEP Opportunity Schedule meeting last week

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SAN FRANCISCO OAKLAND BAY BRIDGE  
EAST SPAN SEISMIC RETROFIT SAFETY PROJECT  
SELF-ANCHORED SUSPENSION BRIDGE  
(SUPERSTRUCTURE AND TOWER)  
PROJECT NUMBER 660110

## SAS - MEP OPPORTUNITY SCHEDULE MEETING

**March 11, 2009 Meeting Recap**  
**WDC Conference Room**

- **ATTENDANCE:**
  - **CT:** Mike Stone, Bill Shedd, Mike Travis, Mark Woods, Martin Chandrawinata, Rob Feather
  - **ABFJV:** Chris Bausone, Scott Yeager, Karsten Baltzer
  - **BLI:** Anna Lee, Amy Cha
  - **FWS:** Bill Farrell
  - Some attendees had to leave early but most were there for duration of meeting, which started shortly after 1pm and continued for about 4 hours.
  
- **GOALS**
  - Main: Mitigate delays to meet or exceed project milestones for Phase completion
    - Phase 1 - March 2012 – all work west of Pier W2 centerline
    - Phase 2 – September 2012 – all work to open Westbound lanes to traffic
    - Phase 3 – March 2013 – all remaining work to complete the project
  - Alternative: Open the bridge to traveling public by Phase completion milestones even if substantial project completion has not been attained
    - Some work over traffic may be necessary to complete
    - Temporary lane closures may be necessary to complete
  
- **REVIEW WORK SCOPE, SEQUENCE, CONSIDERATIONS FOR DISTINCT AREAS REQUIRING MEP ACCESS**
  - **W2 UNDERGROUND**
    - Electrical work: rigid conduit, duct banks, vaults w/ manholes, cables
    - **Predecessor:** Cap Beam falsework and foundation removal
    - Tower Tie-back piles and anchoring block in vicinity
    - Completion planned with Phase 1
    - **ABFJV design consultants for tower tie-back have been made aware of the required MEP underground work nearby and been directed to account for pile overburden disturbance that is expected during excavations for MEP.**

- **W2 BELOW RETAINING WALL COVER SLAB**
  - Electrical work: cable trays, supports, cables, Seismic, Grounding
  - W2W retaining wall requires new penetrations for electrical
    - Consider coordinating wall penetration work with duct bank excavations to eliminate redundant digging. Bleyco can begin their excavation at the retaining wall.
  - Electrical installations attach mainly to retaining wall
  - Cable tray supports at W2W require drilling and anchoring in concrete
  - Seismic and Grounding installations at top of pier footing
  - Access is required along full height of retaining wall
  
- **W2 ABOVE RETAINING WALL COVER SLAB**
  - Electrical work: pull boxes, supports, flexible conduits
  - Mechanical work: piping, fittings, expansion loops, supports, terminations
  - MEP installations attach to cover slab: require drilling and anchoring in concrete
  - Predecessor: erection of cover slab, which is not expected to be in place until late in the project schedule.
  - CT Action: double check limits of pipe terminations and verify that design/contract exists for a YBI contractor to make the tie-ins.
  
- **W2 COLUMNS**
  - Electrical work: cable trays, pull boxes, supports, cables
  - Mechanical work: piping, fittings, supports
  - Electrical supports require drilling and anchoring in concrete
  - Access is required along full height of columns on east side of W2
  - Workpoints are likely to be accessed from boom lifts, with material hoisting by crane. Grading for level ground may be required.
  
- **W2 CAP**
  - Electrical work: cable trays, supports, cables, rigid conduit (to dehumid unit)
  - Mechanical work: piping, fittings, supports
  - Electrical supports require drilling and anchoring in concrete
  - Access is required to bottom and east side surfaces of cap concrete
  - Predecessor: lower the Cap Beam work platform in preparation for cable work
  
- **W2-OBG TRANSITION**
  - Electrical work underneath: cable trays, supports, flex conduit, cables, grounding
  - Mechanical work around sides: piping, fittings, supports
  - Catwalk for main Cable installation may impede some mechanical work
    - Outboard air and water pipes transitioning from Cap Beam to OBG
  - Cradles for OBG may impede electrical work
  - Access is required below girders for structural supports installation and electrical installations
    - Access by boom lift or other means
    - Can any existing falsework be utilized?
  - Access is required inside girders for heavy concentration of electrical work including a large splice box for 15kV
    - This note was just to emphasize that there are many many electrical installation and wiring activities to do in a relatively small area.
    - 15kV splice box is planned for loading/staging while there is an open end of the Lift Segment, prior to, or shortly after, it gets erected.
  - Access is required at girder sides for mechanical work
  - Closure pour must be cured prior to installation of some pipe supports
    - Closure pour occurs sometime between erection of OBG Lifts 4 & 8

- **OBG-WB GIRDER**
  - Electrical work: cable trays, rigid conduits, pull boxes, cables, lighting, switches, receptacles, Seismic, Navigation, Fiber Optic, 15kV
  - Access/Egress in/out of girder is limited to small access holes near field splices
  - Cable trays are intended to be loaded from open end of lift segment
    - Will electricians have access to OBG segments prior to their erection, for staging materials and/or installing longitudinal cable trays on supports?
  - **OBG-WB construction generally has priority over OBG-EB**
- **OBG-WB ROADWAY**
  - Electrical work: rigid conduits, flex conduits, pull boxes, cables, lighting, 20m light poles, receptacles, Call Box, TOS cameras, MVDS
    - **Light pole prototypes are in fabrication**
  - Mechanical work: piping, fittings, supports, utility stations, expansion loops
  - Access is mainly required in and around roadway barrier
  - Access holes in deck plate must be repaired prior to some pipe installation
    - **No problem**
  - Completion is planned with Phase 2
  - **OBG-WB construction generally has priority over OBG-EB**
- **OBG-EB GIRDER**
  - Electrical work: cable trays, rigid conduits, pull boxes, cables, lighting, switches, receptacles, Seismic, Navigation, Fiber Optic, 15kV
  - Access/Egress in/out of girder is limited to small access holes near field splices
  - Cable trays are intended to be loaded from open end of lift segment
    - Will electricians have access to OBG segments prior to their erection, for staging materials and/or installing longitudinal cable trays on supports?
- **OBG-EB ROADWAY**
  - Electrical work: rigid conduits, flex conduits, pull boxes, cables, lighting, 20m light poles, receptacles, Call Box, TOS cameras, MVDS
  - Mechanical work: piping, fittings, supports, utility stations, expansion loops
  - Access is mainly required in and around roadway barrier
  - Access holes in deck plate must be repaired prior to some pipe installation
- **OBG-CROSSBEAM AT SERVICE PLATFORMS**
  - Electrical work: cable trays, rigid conduits, lighting, switches, receptacles
  - Access to crossbeam interior is from outside at service platforms or from inside of girders
  - Cable trays are intended to be loaded prior to erection of crossbeams
- **OBG-SERVICE PLATFORMS**
  - Electrical work: ~~equipment racks~~, wireways, lighting panels, utility panels, transformers, breakers, panel enclosures, SCADA, Seismic, TOS/COM, 15kV
  - Access to service platforms is from crossbeams
  - **Precessor: Service Platform bolt-up and equipment rack installation (by ABF)**
  - **Coordinate hoisting of all material onto platforms.**
- **OBG-EB BIKE PATH**
  - Electrical work: rigid conduit, flex conduit, lighting, 3.5m poles, Call Box
  - Mechanical work: piping, fittings, supports, utility stations, expansion loops
  - Access is required along edges of bike path and underneath bike path
  - **CT uncertain whether or not bike path truly needs to open for public access when Eastbound roadway is opened.**
  - **Temporary piping and spools for permanent pipe are required at West end due to the later installation after (SAS project completion) of bike path West of PP9.**

- **OBG-TOWER TRANSITION**
  - Electrical work: rigid conduit, splice boxes, messenger cables, flex conduit, cables, lighting, grounding, Seismic
  - Mechanical work: piping, fittings, supports, expansion loops, Booster Pump
  - Access to electrical equipment platform at OBG-EB may be delayed due to presence of temporary crane tower
  - Predecessor: Erection of Service/Access platforms
  - T1 Erection Tower (T1-ET) impedes erection of electrical service platform attached to OBG-EB between PP40 and PP41. T1-ET will not be removed until after Tower Head erection.
  - Design of the four large pull boxes (A,B,C,D) is not complete.
  - This area requires more attention from Designers and Contractors, since basically everything in and on the Tower gets fed from OBG.
  - Architect is having negative affect on completion of MEP design work at Elev. 53.85, which prevents construction planning.
  
- **TOWER SHAFTS AND PLATFORMS INSIDE**
  - Electrical work: cable trays, cables, lighting, receptacles, switches, utility panels, transformers, breakers, Seismic
  - Access will be through permanent means of access/egress
  - What is predecessor to MEP access?
    - For electrical In general: for each of Lifts 1-4, erect/bolt shafts, struts, cross bracing, facades
  
- **TOWER SHAFTS AND PLATFORMS OUTSIDE**
  - Electrical work: conduits, cables, pull boxes, lighting, receptacles, switches, Nav/Av Warnings, Seismic
  - Mechanical work: Elevator, piping for air/water, Booster Pump
  - What is predecessor to MEP access?
    - For electrical In general: for each of Lifts 1-4, erect/bolt shafts, struts, cross bracing, facades
    - For pipe risers installation below Elev 53: erect/bolt Lift 2 or Lift 3
    - For pipe risers installation above Elev 53: erect/bolt Lift 4
    - For elevator mast installation: load transfer
  
- **TOWER HEAD**
  - Electrical work: conduits, cables, lighting, switches, receptacles, Aviation Warning, Dehumid unit hookup
  - Mechanical work: Dehumid unit, dehumid ductwork, supports
  - Access will be through permanent means of access/egress.
    - Additional access available via temporary elevator for tower from Elev. 57 on up and via catwalk for main cable.
  - Ductwork installation can't be completed until after saddle housing is installed
  - What is predecessor to MEP access?
    - Load transfer and Tower Head erection
  
- **TOWER ANCHORAGE**
  - Electrical work: Conduits, pull boxes, cables, lighting, switches, receptacles, Seismic, Dehumid unit hookup, Elevator hookup, Sump Pump hookup
  - Mechanical work: Dehumid unit, dehumid ductwork, supports, Sump Pump, and piping, Elevator
  - Access will be through permanent means of access/egress
  - What is predecessor to MEP access?
    - In general: Structural welding and bolting
    - For Sump Pump and misc other work: erect/bolt Tower Skirt

- **T1 PILE CAP**
  - Electrical work: conduits, cables, lighting, Navigation Warning
  - Do temp structures affect access? **Yes**
  - **Predecessor: Temp structure removals and pier fender installation**
- **TOWER-CABLE TRANSITION**
  - Electrical work: conduits, supports, cables
  - Mechanical work: dehumid system ductwork
  - Access for MEP must follow cable shroud installation
  - **Predecessor: erect/bolt Tower Head, Cable Shrouds, Saddle Housings**
- **SAS-SKYWAY TRANSITION**
  - Electrical work: cable trays or conduits, supports, cables, splices
  - Mechanical work: piping, fittings, expansion loop, supports, tie-in
  - Access is required for mech work below bike path
  - Hinge A pipe beams carry conduits and electrical circuits, so they must be set prior to completion of electrical work
  - **Predecessor: load transfer and final elevation setting for obg and bike path.**
- **CABLE MAIN SPANS AND BACK SPANS**
  - Electrical work: messenger cable, flexible conduits, pull boxes, cables, lighting, Seismic, Aviation Warning
  - What is predecessor to MEP access? **Cable wrapping (and then messenger cable installation)**
  - Will catwalk impede any electrical installations? **No. Catwalk can be utilized**
  - At what sequence will catwalk be removed? **Last, after painting**
  - How many cable wrapping machines will be used?
    - **2 machines at same time on different cable spans**
    - **Anticipated rate of wrapping is approx one section (cable band to cable band) per day.**
    - **Handrope stanchions to be removed for wrapping machine to pass cable bands and immediately reattached after machine passes cable band.**
  - Can electrical components be installed shortly behind cable wrapping progress? **Yes**
  - Is painting a predecessor for electrical work? **No. Painting is successor activity**
  - What is cable wrapping and paint sequence for main span and back spans, north side and south sides?
    - **The two back span cable runs will be wrapped at the same time and the two main span cable runs will be wrapped at the same time. It's not decided which span will get wrapped first. Cable wrapping will follow load transfer.**
- **CABLE ANCHORAGES AND SADDLES**
  - Electrical work: dehumid unit hookups near West jacking saddle, East anchorages, Tower saddle (same as Tower Head)
  - Mechanical work: dehumid unit near west jacking saddle, East anchorages, and Tower saddle; dehumid ductwork at west saddle housings and shrouds, Tower saddle housing and shrouds, OBG anchorage and saddles
  - East anchorage dehumidification system installation is affected by cable installation and anchoring operations
  - Ductwork (and some electrical) installation must follow cable shroud and saddle housing installations at Tower Head and West Saddles
  - **Saddle housings and cable shrouds will be installed after load transfer**
  - What is predecessor to duct installation at East Anchorages?
    - **Cable installation and erection of OBG anchorage enclosure**
  - How/When can dehumid units be loaded into East anchorages?

- It may be possible to hoist dehumid units into open sides of OBG for staging at (or near) their mounting locations
    - CT research whether or not dehumid system must be operating at time of roadway openings
  - **E2 COLUMNS CAP**
    - Electrical work: pull boxes, conduits, cables
    - Access is required at side of cap
    - Will temporary work for bearings or shear keys limit MEP access to east side?
      - To be checked
  - **E2 COLUMNS**
    - Electrical work: conduits, cables, supports
    - Access is required along full height of columns
    - Do temp structures affect access?
      - To be checked
  - **E2 PILE CAP**
    - Electrical work: conduits, pull boxes, cables, lighting, Navigation Warning, Seismic
    - Do temp structures affect access?
      - To be checked
- **LOAD TRANSFER CONSIDERATIONS**
  - How much barrier movement or compression is expected relative to deck?
    - Can conduit be secured to barrier and pull boxes prior to load transfer?
      - Yes, but only if conduit won't impede barrier bolting activities
  - ~~○ Can conduit be secured to deck prior to load transfer?~~
  - Will temp tower removal create more OBG movement or compression? **No**
  - Will OBG movement or compression affect MEP installations inside the OBG? **Likely not**
  - Does proper load transfer require weight of MEP materials to be installed in/on OBG? **No**
  - ~~○ Does proper load transfer require weight of Travelers to be hung from OBG?~~
  - **Consult with Design JV regarding compression or relative bridge movements**
- **GENERAL MEP CONSIDERATIONS**
  - Structure transitions are likely to have temporary structures impeding MEP installations prior to removal of temporary structures
    - What effect would this have on system installation?
      - Discontinuity that may be overcome by temporary installations if need be
    - What effect would this have on system testing?
      - Potential to delay testing until transition zone MEP can be installed
  - Must all work on cables be completed prior to opening roadways to traffic?
    - Perhaps not for some things, such as testing Seismic system, but completion of all MEP installations on main cables should be a consistent goal due to hazard of working above traffic
  - Must all roadway lighting, MVDS units and call boxes be installed and operational prior to opening roadways to traffic?
  - Must Tower outside work be completed prior to opening roadways to traffic?
  - What areas will ABFJV make available for local storage or staging of materials?

- ABF to coordinate storage/staging areas with Subcontractors. Space is limited.
- Review details of Temp Structures that may impede MEP work or be useful for access to MEP work

- **MEP CONSIDERATIONS IN AND AROUND BARRIER**

- Conduits are intended to be loaded from open end of barrier segments.
  - What is Bleyco plan for moving conduits into place and securing them?
    - Bleyco plan is to install and secure conduits as soon as they are allowed access to do so. For conduit installation they require access from the open end of barrier segments
  - Rigid conduit will typically be supplied in 10-foot lengths
- Schedule currently shows all barrier (through Lift 14) getting set and bolted prior to conduit installation beginning
  - Can schedule be condensed to show conduit installation beginning sooner and progressing as barrier erection progresses? Perhaps
  - Will barrier bolting be impeded by conduit and pull box installation? Yes
    - Barrier bolting will be impeded but not completely. Lowest clearance for bolting access is to COM conduits and pull boxes
    - Bleyco may not want to install conduit ahead of time if they can't also install the associated pull boxes
  - What is predecessor for securing conduit to barrier and pull boxes?
    - Barrier bolting
  - Can pull box installation and conduit fastening progress shortly behind barrier bolting progress? Yes
- Can piping installations progress shortly behind barrier bolting progress? No
  - Must piping installation be preceded by conduit and pull box installation? Yes
  - Must piping installation be preceded by cable pulling? Yes
- Must electrical testing precede installation of barrier cover plates at pull box locations? At other locations?
  - No, but pull box locations should be labeled (permanently, as well as temporarily) for easy identification in the future, in case a box needs to be accessed.

- **MECHANICAL SCHEDULE OR SEQUENCE CONSIDERATIONS**

- Schedule currently shows work for both roadways being performed simultaneously. Considering the Phase 2 completion milestone, should work along Westbound roadway progress ahead of work along Eastbound roadway?
- Must all pipe installation follow after load transfer?
  - Most pipe installation may have to follow (electrical) cable pulling as well as load transfer
- What lengths of steel pipe will be preassembled prior to installation?
  - Lengths of pipe assemblies will be limited by length of truck trailer, assuming truck access onto OBG from Skyway. If lengths of pipe are hoisted to the bridge deck, there may be other limitations.
  - FWS update since meeting: FWS plans to pre-assemble pipe into 10 meter lengths on a project site staging area and deliver those to bridge.
- ABFJV consider painting steel pipes prior to their installation?
  - This is a Contractor Means and Methods topic that ABFJV will consider and discuss internally with the appropriate Subcontractors
- Schedule currently shows testing activities for each each system by phase, followed by an overall performance test. Is schedule realistic or can some time get reeled in?
  - Testing requirements have many variables affecting their sequences that are very difficult to foresee at this time. This complex topic will have to be studied and monitored for impact by "Opportunity" decisions.
- What is FWS plan for resource loading? To be discussed later
- What is planned for local storage or staging of materials? To be discussed later

- **ELECTRICAL SCHEDULE OR SEQUENCE CONSIDERATIONS**

- Can Bleyco procure and deliver materials and equipment prior to the current schedule completion date of January 2010? Not needed
- What electrical activities have load transfer as a predecessor? Refer to Recap notes from distinct areas requiring MEP access.
- What is BLI plan for resource loading? Labor supply will conform to project demands
- What is planned for local storage or staging of materials? Storage at project site as per availability and provision from authorities in charge
- What length of cable tray or conduit should be installed prior to cable pulling?
  - Prior to pulling cables, all cable trays and conduit should be installed. However, Bleyco may be able to work around discontinuities at limited locations such as transitions between W2, OBG, Tower and Cable

- **OUTSIDE AGENCY INVOLVEMENT**

- Coordination is required for the following systems with the following groups. Can outside agencies be trusted to cooperate with SAS schedule opportunities?
  - Traffic Operation Systems - TOS Specialists (Caltrans non-SAS)
  - Strong Motion Detection & Recording Systems - CDMG
  - Navigation & Aviation Warning Systems - FAA & Coast Guard
  - BASE (Bay Area Security Enhancements) – Caltrans (non-SAS) & Federal Homeland Security
  - Elevator – D.O.S.H.
  - All outside agency involvement is the ultimate responsibility of the State, with some Contractor responsibility to coordinate work activities such as placement of strong motion detectors by CDMG.

- **DESIGN CONSIDERATIONS**

- How does incomplete design work for electrical installations at Tower platform affect schedule opportunities?
- What other designs are incomplete and have potential to delay the project schedule?
- The Department must evaluate how incomplete design work affects the "Opportunities" being considered and the ability in general to schedule related construction work

- **OPPORTUNITY SCHEDULE SUGGESTIONS**

- Sever the Finish-Start schedule ties between load transfer and barrier bolting. Complete barrier bolting as early as possible.
- Don't change MEP layouts at Tower platform elevation 53.85. Have architect design curtain screens to hide all things they consider to be hideous.
- For Architectural and Schedule considerations to resolve issues at OBG-Tower transition:
  - Change MEP platform design to make a separate MEP platform on Tower below roadway level.
  - Or, change MEP platform design to make a Tower Façade above Elev. 53.85 that houses MEP elements instead of structural elements
- In consideration of opening roadways to the traveling public as early as possible:
  - State can decide to jettison requirement to complete some MEP work in any of the three Phase milestones, opting to complete them by a later date
  - Additional temporary MEP installments may be required to achieve this
  - Make a list of MEP items that can (or can't) wait to be completed at a more opportune time

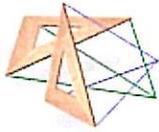
SAS OPPORTUNITY SCHEDULE  
MEP

Attachment #3 (11/11)

3/11/09

2PM

NAME	PHONE	EMAIL
- MARTIN CHANDRAWINATH	510-286-0535	Martin.Chandrawinath @dot.ca.gov.
- Michael TRAVIS	<del>916</del> -919-7158	Michael.Travis@dot.ca.gov
- CHRIS BAUSONE	510-808-4566	CBAUSONE@ABFJV.com
BILL FARRELL	415-468-5000	billf@fwspencersoninc.com
KARSTEN BARTZETZ	ASF	
ROB FEATHER	CT 867-4505	BERNARD_R_FEATHER @DOT.CA.GOV
SCOTT YEAGER	ASF 510-808-4569	syager@abfjv.com
ANNA LEE	415 896 6072	alee@bleyeo.com
AMY CHA	415 896-6072	acha@bleyeo.com
MIKE STONE	510 286 6091	MICHAEL_STONE@DOT.CA.GOV
Bill Shedd	510 385 6912	bshedd@dot.ca.gov
Mark Woods	510 385-6897	Mark_Woods@dot.ca.gov



Martin  
Chandrawinata/D04/Caltrans/  
CAGov

03/20/2009 01:38 PM

To Bill Shedd/D04/Caltrans/CAGov@DOT, Michael  
Travis/HQ/Caltrans/CAGov@DOT, Grady  
Hart/HQ/Caltrans/CAGov@DOT, Sharad  
cc April Smith/D04/Caltrans/CAGov@DOT, Scott  
Fabel/D04/Caltrans/CAGov@DOT, George  
Boughosn/D04/Caltrans/CAGov@DOT, dross@ch2m.com,  
bcc

Subject MEP Penetration on Segment 4BW (Westbound North)

All:

I received this from Gina this morning and thought you'd like to see this too.

Attached below is a photo of Segment 4BW, plate SP4 with 2 MEP penetrations. The holes are 62mm in diameter for the Light Pipe, between PP26 and PP28.

Regards,

Martin P. Chandrawinata  
SAS Bridge Construction  
Ph. 510-286-0535  
www.baybridgeinfo.org



4BW, SP 4.jpg

