

Group Memory  
 Bridge Construction Forum  
 February 21, 2007  
 Northern California

**Upshot**

These are the action items brought forward at the meeting.

Ref. #	Who	What	When
1		Specs: specs for separating redundant vs. non redundant design for foundation piles	
2		Specs: Use of self consolidating concrete for CIDH piles.	
3		Specs: Pre approval of pipe piling manufacturers and different weld processes that they use	
4		Specs: Restart the Pile Driving Subcommittee meetings to discuss pile specs.	
5		Specs: Identification of anomaly standard repair plans and quicker resolution of pile anomaly repair	
6		Specs: Exclude electric resistance welding from section 8.3	
7		Specs: Overlapping cage column and pile cage – eliminate piling problematic design details.	
8		Specs: Design with more standard industry off-the-shelf products.	
9		Economics: separate some items into additional pay items to improve cash flow for contractors.	
10		Economics: Institute tentative work agreements as best practice statewide for disputed work to provide prompt payment on CCO work completed	
11		Economics: Consider interim pay estimates	
12		Economics: Increase “schedule of values” for materials on hand, large final pay items, access, structure concrete bridge, falsework and shoring.	
13		Economics: Separate pay items for CIDH rebar.	
14		Economics: Review rental rates for emergency rates.	
15		Economics: More education for RE's on new CCO direction, including training on protecting the scope on CCO's.	
16		Economics: Training on estimating CCO values.	
17		Materials: Make list of approved concrete mixes available to contractors in areas. Put on web site prior to bidding.	
18		Materials: Provide performance requirement rather than specific sizes (example: shoring)	

Ref. #	Who	What	When
19		Materials: Design for standard industry sizes.	
20		Materials: Pre-approval of ERW pipe weld	
21		Materials: Buy America- domestic supply not enough. Get examples and identify projects that need this.	
22		Materials: Coupler testing – pre-approval. Rebar hoops.	
		Materials: eliminate resubmittal of identical paperwork for each job.	
23		Bidding Environment: expand on 12 month look-ahead report, put out narrative of projects at a minimum.	
24		Bidding Environment: Involve industry on constructability reviews.	
25		Bidding Environment: Obtain consultant contract for constructability reviews.	
26		Bidding Environment: Look at size of contract – mega projects need joint venture; industry capacity limited. Bonding over \$100MM	
27		Bidding Environment: More pot hole - pot hole all utilities. contracts or item	
28		Bidding Environment: provide escalation ladders at pre-construction meeting.	
29		Bidding Environment: Senior review of falsework review comments	
30		Bidding Environment: Industry-sponsored training on pipe pile standards	
31		Bidding Environment: Industry training on current CIDH methods.	
32		Bidding Environment: Need to disseminate pre-approved false work plans – better instructions to OSC field staff	
33	Bob P	Work with Karla Sutliff on	
34	Robert C	Follow up with the statewide traffic managers and identify success stories on managing closures for construction.	
35	Robert C	Check on feasibility of graduating the penalties for late work on closures – example: guardrail repair requiring a ramp closure has same penalty as a full freeway closure.	

**Critique from this meeting:**

What went well	What Needs Improvement
1.	1.

1. Opening –
  1. 1. We are trying to generate ideas to improve efficiency, and improve the way we do business.
2. Ground rules:
  2. 1. Introduce yourself when you speak.
  2. 2. One meeting at a time.
3. Structure Specification discussion.
  3. 1. Are there ways to improve the gamma gamma testing? Do we need to do so much testing?
  3. 2. We should go with what the rest of the nation uses. We are only state that relies on gamma gamma as the first method.
  3. 3. Welds – ERW is not addressed in AWS. We have to do other things that are not in AWS 8.3. There are industry standards which have acceptable quality measures that are not addressed in our specifications – Industry and Caltrans are not necessarily working to align – this causes extra work to recognize what is otherwise an accepted process. Suggestion – Review the ERW process and see if it is to be excluded or get it out of 8.3?
  3. 4. With deep shaft piles – why are we now taking a specification and applying it to a pipe pile? Could Caltrans tailor their spec to things that are on the market rather than having the market produce special items at greater cost, time, effort?
  3. 5. We see an excessive delay time in getting pile data sheets. When an anomaly occurs, the data sheet goes to designers, geotech review, etc. This extends the time it takes to repair a pile. It extends the time to see if the repair will even be required at all.
  3. 6. Concrete mixes and suppliers – Like with welds, there are convoluted processes where we intermingle methods with performance specs.
  3. 7. DESIGN STRATEGY has a significant effect on constructability. How do you address transition from column to the shaft? Caltrans is using design approaches in transitions for larger diameter drilled shafts, and above-ground columns. Overlapping of columns – temporary casings are nearly impossible to remove because of rebar cages, etc. Specifying permanent casings, diameter transitions, all these things are extremely difficult compared to what other agencies require. Uniform diameters going all the way to the top could work. What is really the cause for anomalies?
  3. 8. Separating redundant and non-redundant structures – What level of quality control is needed for redundant vs. non-redundant structures? What level of quality control is needed for different diameters of shafts? Need specs to address redundant- vs non-redundant.
  3. 9. Welding – spiral submerged arc welding – AWSB11 - interpretations of Caltrans specs make us do 100% NDS.
  3. 10. Welding QC plan – for us to do visual and NDS testing – need several certifications. There is an increasing level of quality required. This spec. creep requires more certifications, more testing. Fracture–critical endorsement – pipe manufacturers will

have increased cost because of 100%NDS, and dual certification. API requires hydro testing for monogram. All this creates added cost.

3. 11. Caltrans has combined AWS, ASTM, API specs. Industry makes pipe for one or another of the three, not some convoluted combination. Caltrans has its own standard that adds time and cost. Have pre-approval of mills – particularly the ERW mills, instead of job-by-job, pipe-by-pipe approvals.
  3. 12. Need to ask Dan Speer about getting the committee back together to discuss spec issues and pre-qualification of manufacturers/mills.
  3. 13. API monogram is accepted off the shelf – There is a lot that must be done to the pipe to get this monogram that Caltrans does not need. Caltrans needs to declare what level of inspection of joints will be required on pipe.
  3. 14. Caltrans needs to look at what is going on in neighboring states. Caltrans needs to stop saying about neighboring states, “They are different than us.”
  3. 15. Once anomalies are identified, how quickly can we resolve them?
4. Structure Economics discussion
4. 1. Partnering – need action more than words.
  4. 2. Caltrans is the best of our clients in terms of payments.
  4. 3. Problems are attitude-based. Sometimes the contractor in the field has adversarial relationship with Caltrans.
  4. 4. Work agreements for extra work are helpful.
  4. 5. Separate pay items for various materials – similar to piles. ( payment for materials does not help – in piles, it still goes back to material on hand - )
  4. 6. Need to expand materials on hand to include more of the permanent materials on the project. For example, steel that hits the shop floor could be considered materials on hand, the fabricator could be getting paid sooner.
  4. 7. Allow change orders to pay for materials on hand.
  4. 8. We need to look at the way bid items are broken down.
  4. 9. Need earlier pay out to the contractors.
  4. 10. Schedule of values for large final pay items – or overall look at standard bid items would be good idea. Ex: erosion control items for \$2K vs. larger items worth \$2MM.
  4. 11. Need to be caution that when things are paid - the RE needs to be accurate, when there is no retention.
  4. 12. Drilled shafts: bid items for drilling vs breaking out the rebar cage as a separate bid item– liability is an issue.
  4. 13. Schedule of Values for access. Use river access item as a separate pay item.
  4. 14. Change Order Process: There are many problems with the CCO process. Caltrans needs to look at their whole change order process and agree that it is a force account if there is no agreement on lump sum change order. Unilaterally approved lump sum change order for extra work defeats the purpose for lump sum change orders. Breakdown seems to be between the field and the CCO desk.

4. 15. CCO's lag two to three months sometimes – Caltrans needs to develop a process where Contractor can be paid if the RE approves the work. There should be no need for the contractor to wait for payment while internal approval process grinds away.
  4. 16. New Caltrans instruction is for RE to process a unilateral force account agreement if agreement with contractor cannot be reached on terms and conditions of the CCO, but the work is agreed upon. Supplemental CCO could be used to address the subsequently agreed-to price. Management intent needs to be communicated to the RE in the field.
  4. 17. RE Certificate program will include cash flow issues on contracts.
  4. 18. Timelines on multi-step procedures for payment approval can be problem when not followed.
  4. 19. Memorandums need to be scrutinized in the field by the senior.
  4. 20. Force account does not guarantee payment for work.
  4. 21. Caltrans needs to focus RE's, consultants, management and executive staff more on the "rules of engagement" on documents, who has what entitlement, who has what responsibility on warrantee of documents.
  4. 22. Force account and scope protection – There needs to be understanding that contractor protects the scope when there is an agreed-to lump sum. When there is force account the scope is not protected - the contractor does what you want. Fixed price lump sum is much lower typically than force account because of this.
  4. 23. Each individual issue needs its own change order.
5. Structure Materials
5. 1. CT Engineer needs to specify the performance requirements, not the name brand or model type.
  5. 2. Caution: Full, complete and accurate drawings requirement gets in the way of specifying performance.
  5. 3. Caltrans needs to look outside their state, and use innovation from other people's innovations. California is not as unique as Caltrans would have you think. New ideas and open minds are needed.
  5. 4. Make approved mix designs available to all the contractors.
  5. 5. Have a list of approved mix designs for a given plant on the web site.
  5. 6. Requiring cement from a single source may no longer be valid.
  5. 7. Consider the manufacturing processes and lead times needed to get fabricated materials.
  5. 8. Consider designing around standard materials from mills. Get the mills approved for materials. Design around things that are commonly available.
  5. 9. Approve ERW pipe – don't limit your spec to API. Caltrans is taking a huge source of pipe away by doing this. 20% of the jobs have "weird" style pipe pile –
  5. 10. Approved mills with approved processes and a good working understanding between the mill and the owner could get to where we need to be.

5. 11. “Buy America” does not allow us to use steel that was made outside the country. This will bite us sooner or later. Generally steel is scrap that is melted down. The raw material may have been Fords and Chevrolets that were made in America.
  5. 12. Concrete ready-mix supplies need to be pre-qualified. We should not be required to do the tests every time.
  5. 13. Pre-quals for rebar hoops and couplers should be done to minimize continuous and redundant/duplicate testing.
  5. 14. Specifications are not consistent. for steel pipe piles (standard spec 49-401) API 5L (no grade specified) vs. A252 Grade 3 over 360 MM.
  5. 15. Pipe approved on one contract should be allowed to be moved to another job on another contract. The process needs to be made easier, simpler.
  5. 16. Delayed start – flexible specification should be allowed for up to 55 days for up-front work. This is being done by CT on a pilot basis. (On contracts over than 200 working days and \$5MM value.)
  5. 17. Lag between ordering and receiving some fabricated steel can involve price increases before delivery. Caltrans comment: If Industry wants to index steel, that should be taken up with AGC, UCA, etc.
  5. 18. To grow the contractor list, Caltrans needs to assume more risk.
6. Structure Bidding and Construction Environment
6. 1. Narrative for 12 month look ahead.
  6. 2. Provide quantities in the look ahead.
  6. 3. Be willing to put out what you do have, so bidders can have a chance to take a look.
  6. 4. Job site efficiency: partnering process; how well is it working? Partnering is optional right now. Caltrans looking at ways to make partnering more attractive.
  6. 5. Need to build into the partnering process an issue resolution process.
  6. 6. Need to integrate dispute resolution process with the partnering program.
  6. 7. Plan quality: Many designers are not up to date with current methods and equipment. Could we partner with suppliers and contractors to do joint training on how things work, what is the latest technology?
  6. 8. Get industry involved in constructability reviews.
  6. 9. Hire consultants to do constructability reviews. Or call the industry and invite all to attend the review. Include suppliers in this also.
  6. 10. Do constructability review at 30% design.
  6. 11. Use of more pot holing.
  6. 12. Bonding is an issue on big contracts. Caltrans needs to find ways to break up the “mega” projects into smaller packages. There is a down side to this: more coordination, more contractors to deal with, etc.
  6. 13. Expand use of technician class.

- 6. 14. Concern: PE's do not have authority in the field to make decisions on spec or plan changes. PE's should have more authority in the field to make changes in plans or specs.
- 6. 15. Use an escalation ladder at pre-job.
- 6. 16. Have a senior review the false work plan review comments before they go out to the contractor. Every job we go on is a different false work reviewer. This causes frustration as industry learns to work with each different reviewer.
- 6. 17.

10:50 a.m.	Structure Materials	Bill and Ken	Discussion, Action Items
11:30 a.m.	Lunch	Everyone	Recharge
12:20 p.m.	Strategic Growth Plan/Industry Capacity Expansion		Information Q & A
1:20 p.m.		Brian and Jeff	Discussion, Action Items
2:20 p.m.	Break	Everyone	Recharge

2:50 p.m.	Caltrans Management Panel: Rick Land, Chief Engineer Bob Buckley, Chief, Engineering Services Bob Pieplow, Chief, Construction Jay Norvell, Chief, Environmental Analysis Mark Leja, Chief, Design Robert Copp, Chief, Traffic Operations	Moderator: Dolores Valls	Discussion, Information, Action Items
4:20 p.m.	Next Steps – Review Action Items	Dolores Valls	Wrap-up
4:30 p.m.	Adjourn	Everyone	