Bridge Contractors / Caltrans Liaison Committee Meeting
MINUTES

Date: Friday, September 16, 2016
TIME: 10 a.m. to 2:00 p.m.
LOCATION: **Caltrans – Gallegos Conference room**
D11 District HQ Building, 4050 Taylor Street San Diego, CA. 92110

COMMITTEE PURPOSE: *To establish a liaison between Caltrans and the California bridge contracting community focused on structure related items of mutual interest. To maintain an on-going dialogue on pertinent issues and pursue action items in a collaborative effort to improve bridge construction in California.*

COMMITTEE MEMBERS: Industry Members identified by the AGC, SCCA and UCON

MEETING CALLED BY: Steve Altman **TYPE OF MEETING:** Committee Meeting

FACILITATORS: Ken Bocchicchio, John Weldon **NOTE TAKER:** John Babcock

ATTENDEES: See attached list

HANDOUTS PROVIDED: TBD

MINUTES POSTED AT: http://www.dot.ca.gov/hq/esc/construction/br_contractor_outreach/

TOPIC
Welcome and Self Introductions – Co-chairs Ken Bocchicchio, John Weldon During introductions the Caltrans representatives were asked to provide a brief indication of upcoming work in their areas. The *12 Month Advertising Schedule* is available at: http://www.dot.ca.gov/des/oe/contractor-info.html
Opening Remarks and purpose for meeting - Steve Altman Deputy Division Chief - Structure Construction To have the conversation and get a read on how things are going around the state regarding specifications and bridge construction. There are two proposals to provide transportation funding. One if from the Governor and the other is the Fraizer/Bell Bill. We are looking at succession planning a large turnover due to retirements in the near future and need to be prepared for it. Perhaps this could be a future topic. Asset Management within the Department has focused on how to combine funding buckets to have one project rather than several for the same area. Past presentations at these meetings have included gamma-gamma logging by the Foundation Testing Branch (FTB), Accelerated Bridge Construction (ABC), and super windows extended time for traffic windows.

Updates on Previous Topics (Caltrans)

- **Bridge Contractors Falsework Meeting** (John Babcock) -
  - Have not met recently, still pursuing our requirements for the role of having the engineer that designed the demolition plan be on site.
  - Pursuing the development of a specification for a two stage certification of falsework.
- **Clear curing Specification pilot**. (Ken Bocchicchio) –
  - Two projects in District 12 are being used as pilots. Products used meet ASTM requirements. Concerns are aesthetic due to past experiences with clear cures. New products compared with specifications and CARB and AQMD requirements. Pilot projects not complete and technical paper still needs to be written.
  - Used on walls with repeating patterns. Still some darkening of pigmented compounds. Better success with water based non-pigmented compounds. Ultimately a modification of the specifications will be made but need satisfaction of the final product. There may be future requirements of the AQMD that eliminates the use of resin based compounds. Also looking at strengths achieved between different compounds as compared with conventional processes.
  - This pilot did not research the idea of early stripping.

- **3D Bridge Models (BIM) for construction -** Douglas J Dunrud (Caltrans)

Presentation
Utilize 3D for visualizations, construction documentation and structural analysis.

Five advantages of 3 D modeling

1. Geometrics are imported from the Roadway Design Software
2. Models are parametric
3. The physical model can be tied to the analytical model
4. The model can be visualized in the context of the site
5. The CPM can be combined with the 3D model to produce a 4D schedule

1. Our industry is slowly transitioning to using the model

How do contractors share their information – a specification that requires a BIM file to be submitted

Contractors use of 3D models:

1. Identify and resolve conflicts
2. Quantities
3. Construction work planning (Including 4D)
4. Construction surveying

Granite has used it successfully and sees the benefits of using it for collaboration between the team in discussions with field teams.
Granite Rock uses it extensively and has used it to incorporate the falsework design.
Infrastructure industry is behind the vertical industry when it comes to BIM.

Potential to go to 3D printing for presentation models.
Sometimes the contractor brings the technology to the Agency. Tools that both can use is a large investment. Generally used on larger projects or those with alternative delivery.

Caltrans/District 11/Surveys provided the following comments:

1. Caltrans is using the models extensively, although our skills are not at the level shown in the presentation. We are aggressively trying to provide contractors with 3-D models of all roadway projects and are moving to model based control (AMG – Automated Machine Guided) for all major earthwork operations. Not all contractors are equipped.
2. There are concerns that accurate baseline control is not being used during the development of 3-D structure models (and roadway models). It is important to consult with local surveys offices to ensure accurate baselines are tied to the model or risk being on an incorrect datum. As we currently do with Bridge Site Submittal (BSS) and Advanced Planning Studies (APS) work we need to continue to ensure communication between local survey offices and Structures Design to ensure we're all on the same starting point for a project to move along. It is NOT easy to shift from one datum to the next later in the process – because there is not a truly linear/mathematical equation for datum revisions.
3. California is clearly one of the most seismically active regions in the country and NGS has extensive ground monitoring throughout SoCal in particular. They could theoretically calculate a new datum on an annual basis. Although with the length of time required for CT project development we need to pick a datum and stick with it until delivery and construction.
4. NGS is introducing a new datum in 2022. It will be based on a completely changed model of the earth. The change in datum could be up to 5' vertically. Again, another reason to make sure we're all starting on the same page.
5. There is some concern (Paraphrased) about an engineer who said he is laying out his falsework with a GPS receiver. The CA Business and Professions code is being redefined regarding how much construction layout can be performed by a Registered Civil Engineer – it may become something that needs to be performed under the direction of a licensed land surveyor. Follow up with local expert and get new language on what can/cannot be done.

- **Caltrans Risk Management** - Rich Foley (Caltrans)

Presentation (on-line)
How the Department looks at risk.

Our local agencies want more information on our risks, the CTC is asking the same questions.

- **Contractor's Risk Identification and Bidding** - John Weldon (GUY F. ATKINSON CONSTRUCTION, LLC)

This portion of the meeting consisted of a handout that asked participants to write down and also discuss in a roundtable format their greatest risks during:

- Bidding
- Construction

Thoughts were expressed verbally and collected from written submittals from each of the participants and tabulated in the attached matrix.

- **Round Table** - Steve Altman, Deputy Division Chief - Structure Construction

- Critique of how we are doing.
  - Bid questions, do not get clear answers
  - Can you advertise / present the risks that you (the owner) know? More transparency of the risks that the owner has identified, perhaps something in the Information Handout, but that document is quite thick so it is hard to find all of the risks. Plans and specs looked simple, but buried in the document was the call out for a trestle across a water course.
  - Uneven and draconian interpretation of environmental documents
  - Very inaccurate as-builts
  - As we currently do with BSS and APS work we need to continue to ensure communication between local survey offices and Structures Design to ensure we're all on the same starting point for a project to move along.
- Specifications – pilots with crack-less deck specification. Macro and micro fibers and shrinkage reducing admixtures.

- Future Topics:
  - More representation at the Falsework Industry committee
  - Status of how the CMGC / DB contracts are going. Successes etc.
  - Environmental
  - The latest with off-site fabrication and prevailing wages. Carpenters on forklifts. Should they be operators? Labor Board.
  - AB-219 Prevailing wage concrete is adding $40 - $50 per yard
- Caltrans co-chair - Loren Newell
- Contractor co-chair - Dave Riccitiello, President, Golden State Bridge

Recap

- Minutes will be posted and emailed to attendees.
- Next meeting in Northern California
  - March 24, 2017 & Location TBD
- Action items and questions that arose during the meeting.

Adjourn

Attachment 1
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CONTRACTOR RISK ASSESSMENT

Bid Time	Risk	Issues	Impacts
1	Being Low Bidder	Price too low Competitor price too low Contractor pricing project with intent to claim	COST/TIME/CLAIM
2	Bidder Protests	Low bid contested by other contractors Caltrans Evaluation of Bid Responsiveness	COST/TIME/CLAIM
3	Over Engineer's Estimate	Not awarding the project Low bid now known to all other bidders	PROJECT DELAY
4	QC & Testing Requirements	This is unfamiliar territory to contractors – we need Caltrans to better identify the requirements so we can solicit comprehensive quotes from consultants or develop necessary talent in house. Need to know level of testing, reporting and certification, required onsite presence of Surveyor, QC/QA Biologist, Paleontologist, biologist, geologist Archeologist Indian Monitor. Project close-out reports, etc. We work on fixed price budgets and can't quantify hourly on call as needed monitors. Can we expect or develop a Caltrans manual or guide specification to standardize efforts.	COST/CONTRACT COMPLIANCE
5	SWPPP & REAPS Requirements	Agency planning, reporting and monitoring as well as personnel qualification requirements continue to expand – as Contractors are tasked to fill the complete role – SWPPP BMP contract plan bid items are well defined but REAPS are all inclusive and difficult to quantify with huge penalty if poorly executed.	COST/TIME/FINES/DELAY
6	Environmental / Biological / Sound Control / Exclusionary Devices	The potential biological issues are identified in permits but the huge impact to a project if they arise leaves no recourse to owner or contractor. Exclusionary devices are not well defined or guaranteed and often require agency review not originally accounted for in construction windows. Potential mitigation measures need to be identified and vetted with agencies as contingency planning prior to contract award.	COST/TIME
7	Traffic Control	Difficult to control costs and maintain access to and through work areas. Huge penalties for closure delays. Increased risk of accident /injuries in short duration confined work windows, need to better identify Stakeholder/Resource agency agreements or restrictions Limited number of closures increases the risk to a project and can impair a contract completion if unknown risks/accidents use up the closures. Option for alternate work windows and/or alternate work sequencing have proven successful as CCO to contracts. Public and stakeholders have shown positive response to well-orchestrated alternate closure and work sequences. (mega windows)	COST
8	Contract Document / as-built Completeness	Creates confusion at bid time if plans are lacking or missing critical data, ROW not well defined, plan/spec conflicts – issue is magnified in construction if project team does not resolve at the project level. As-builts for retrofit or widening not accurate or provided. Widening of existing structures	COST/CLAIM/TIME

Bid Time	Risk	Issues	Impacts
		and instructed to match existing without existing being identified.	
9	Regional Transit Owner & Construction Manager Caltrans Admin/oversite	Regional agencies often are not as familiar and do not have the resources for contract administration like Caltrans – If a construction manager is used and Caltrans oversite issues are often unresolved	TIME/CLAIM
10	Construction Managers score card with Caltrans	Need to develop a method to gage CM performance and empower them to be decisive in issue resolution	
11	Specification / Contract Interpretations	The local districts or field teams make interpretation of specifications outside industry expectation. Draconian or varied interpretation of environmental documents.	COST/TIME
12	BNSF Work Windows	Current clearance and access requirements are changing with railroads. Aerial demolition protection covers are now required (no at grade covers), 15' track center clearances (vs 10' per standard), promised work windows or track access non-existent on critical work items. Review of submittal documents by rail consultants creates vague interpretation of requirements. No contract recourse if delayed or access denied by Railroads. No Caltrans liaison to railroads. Railroads are not bound by contract or permit to the project requirements or schedules.	COST/TIME
13	Foundation Work / Subsurface investigations	Getting out of the ground with foundations, utilities, differing site conditions. Design may vet risks through design justifying more expensive selections to mitigate risks – these risks need to be identified to contractors to select means and methods available to fully mitigate issues in construction.	COST/TIME/DELAY
14	Bid Inquiry Response	Responses to bid inquiries are imperative. Questions may be to clarify risk items or identify obscure risk items to all bidders.	CLAIMS
15	Known Risks Clearly Identified	Caltrans identifies risks through design – publish known risks and mitigation implemented	CLAIMS
16	Utilities	Defined as-builts or location of utilities. Relocation of Utility requires Owner Review process in addition to contract requirements – Utility requirements/materials/testing in conflict with Caltrans Specifications. (Included in project QA/QC?) Utility or 3rd party inspection of relocated work outside of normal business hours not available or contractor expense. Mark out of facilities not performed by all agencies with DigAlert notification. Petroleum Lines, City Facilities as-builts lacking. Need to include added investigation methods / potholing efforts to reduce delays and project impacts due to unforeseen utility strikes.	COST/TIME/CLAIM/DELAY
17	3rd Party Agency Coordination / Stakeholders	Contractor often unaware of full impacts due to outside agency or stakeholder agreements. Political or legislative requirements imposed on projects as interim milestones or limitations. Caltrans could publish the risks identified in the	PUBLIC OUTREACH

Bid Time	Risk	Issues	Impacts
		project planning phase so contractor can be aware of sensitive issues	
18	Work Areas & ROW Issues	Projects issued without adequate access or easements creates added risk & costs with unknown mitigation.	CLAIM/OUTSIDE LEGAL ACTION
19	Permit Requirements	Agency ACOE, CDFG, RWQCB, FWS etc. permits added into information handout, specifications indicate follow all laws, however specific work related restrictions identified in the permit are not included in the contract documents. Many times these are missed, or not required in construction causing bid confusion	FINES/DELAY/CLAIM
20	Bid Item Quantity	Drastic quantity over/under runs, quantity listed but no apparent work associated, identified work with no bid item, all cause confusion and risk at bid time.	CLAIM
21	Material Shortages	Current economy we have seen shortages of raw and produced materials, or long lead times. Fewer items are stock or readily available creating risk. Caltrans can work with suppliers to anticipate future demand or provide alternates to Caltrans only specified materials to better align with the industry. Requires QA/QC METS involvement	COSTS/DELAY
22	Material Escalations	Asphalt is indexed by oil pricing. All other commodities are not. Concrete, steel, labor, fuel, union, legislative & regulatory escalations are built into bid as risk and affected with project delays.	COST/DELAY
23	Waterway Access	Waterways controlled by regulatory agency, may be identified as navigable, or have specific constraints due to separate permit requirements constrained in the regulatory agencies yearly federal permits. i.e.- sawdust control, limited diversions, maintaining open flow, specific ingress/egress or limitations on duration of impacts for temporary structures if required – trestles, temp fill, diversions, seasonal limitations. Agency requirements also may conflict – FWS vs CDFG vs ACOE on driven pile in open water vs temporary fills vs flow restrictions.	COST/FINES
24	Geotechnical Investigation & test data	Project geotechnical data is often provided as bore logs and then some test data in the information handout usually limited to bridge structures. Often times we need additional information at ancillary structures to determine shoring or excavation stability and the best we can do is guess from the bore logs. Additional information spaced along the project would be money well spent or providing access to design geotechnical information.	COST/CLAIM/

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Construction	Risk	Issues	Impacts
1	Maintain budget under tight schedule	Bid build market has reached critical mass where projects are bid with very slim margins due to over competition. As a result any impact to the project is a direct hit on the profitability of the job. Contractors are more prone to filing claims on all issues to maintain profitability.	COST/TIME/CLAIM/DELAY
2	Injuries / Accidents	Safety is an ever increasing issue for workers not only within the controlled work environment but from the general public. Many more instances are recorded of errant motorists crashing jobsites causing damage to temporary work and also injuring workers. More needs to be done on traffic controlled work areas to separate workers from the travelling public, also increased COZEEP	COST/TIME/CLAIM/DELAY
3	Environmental compliance	Compliance with issues identified in the permits can be difficult – Onsite interpretation of requirements and actual discovery of biological asset onsite causing delays with no recourse for contractor. Mitigation measures need to be vetted with the agencies during permit acquisition and detailed in contract documents to better define extent and type of measures expected.	COST/TIME/CLAIM/DELAY
4	Falsework	Temporary works are always a large risk, more complex construction requirements, larger spans, taller work and reduced work windows all increase the potential for issues.	COST/TIME/CLAIM/DELAY
5	Mass Concrete	Future contracts are to identify all elements considered mass concrete. Cost of this effort is $50/cy and up. Currently no definitive testing or corrective measures are identified should temperatures exceed specified limit. Designers are consulted to determine potential impact but no guidelines are available.	COST/TIME/CLAIM/DELAY
6	Traffic Control	Costs continue to rise on conventional traffic control and are very difficult to budget properly at time of bid leading to overruns. Larger work windows can significantly reduce public impact and expedite work.	COST/TIME/CLAIM/DELAY
7	3rd Party Permits	Permit agencies	COST/TIME/CLAIM/DELAY
8	BNSF/UPRR Restrictions	Railroad (BNSF UPRR - RR) clearances and work access has significantly changed in the last few years. RRs are requiring greater clearance zones, more restrictive access requirements, falsework for bridge demolition – ground protection no longer acceptable. RRs are using outside consultants to review temporary works in RR ROW causing long and difficult approval process. Promised work windows	COST/TIME/CLAIM/DELAY

Construction	Risk	Issues	Impacts
		are at the mercy of the RR internal schedule, not tied to the contract schedule and subject to errant rescheduling or cancelled by the RR. We need better coordination with railroads.	
9	Traffic Work Windows & Penalties	Traffic windows continue to be limited and shorter in duration with very severe penalties for late openings. We need alternate methods of accessing the work in more productive blocks such as super windows or extended windows. Many have been completed to date with great success	COST/TIME/CLAIM/DELAY
10	Consultant CM	Consultants acting as field representatives creates disconnects in the construction process. The consultants are expected to make decisions yet bound by employers not to make decisions. Creates division in the project teams and increases potential for claims. Caltrans needs to review performance of consultants and empower or provide decision capability onsite.	COST/TIME/CLAIM/DELAY
11	Risk transferred to Contractor w/o communication	GGBD example – Lawyers modified the contract to force Contractors to pay the district for unforeseen risks unknown to the Contractor…	COST/TIME/CLAIM/DELAY
12	New Specifications & Products	Moving forward what is the path Caltrans will take on allowing approving new materials and processes to keep current with industry advances?	COST/TIME/CLAIM/DELAY
13	Project Team Interaction & partnering Resolution of Unforeseen Issues at lowest level	Continued efforts need to be made to better implement professional interaction between Contractors and Owners. Divisive environments cause increased costs, delays and claims.	COST/TIME/CLAIM/DELAY
14	Foundations	Subsurface construction is a major undertaking and great impact to the project. Pile drive issues, CIDH issues, shoring, differing site conditions, conflicts. Known risks need to be identified to contractor	COST/TIME/CLAIM/DELAY
15	Utitlities	Defined as-builts or location of utilities. Relocation of Utility requires Owner Review process in addition to contract requirements – Utility requirements/materials/testing in conflict with Caltrans Specifications. (Included in project QA/QC?) Utility or 3rd party inspection of relocated work outside of normal business hours not available or contractor expense. Mark out of facilities not performed by all agencies with DigAlert notification. Petroleum Lines, City Facilities as-builts lacking. Need to include added investigation methods / potholing efforts to reduce delays and project impacts due to unforeseen utility strikes.	COST/TIME/CLAIM/DELAY

Construction	Risk	Issues	Impacts
16	Qualified Manpower Responsibility of Impacts to Schedule	Qualified manpower, workforce aging, younger generation not so interested in being out 8-10 hours a day. Southern Oregon has some training in their public schools that seems to be generating an influx of apprentices. Larger projects will show a migratory work force following the larger projects. Companies do not necessarily have the key guy anymore. PG&E is working with community colleges to develop a pool of lineman. Getting & developing the craftsman. Apprenticeship coordinators are finding that 18 year olds delay entry into the crafts and are then 27 before entering. As an industry we need to do a combined outreach to help develop the next generation	COST/TIME/CLAIM/DELAY
17	Water Diversions	Working over and around water conveyances is risky. Many agency requirements some conflicting. Waterways controlled by regulatory agency, may be identified as navigable, or have specific constraints due to separate permit requirements constrained in the regulatory agencies yearly federal permits. i.e.- sawdust control, limited diversions, maintaining open flow, specific ingress/egress or limitations on duration of impacts for temporary structures if required – trestles, temp fill, diversions, seasonal limitations. Agency requirements also may conflict – FWS vs CDFG vs ACOE on driven pile in open water vs temporary fills vs flow restrictions. Also added worker protection, training and equipment required.	COST/TIME/CLAIM/DELAY
18	Bid Item Quantity Busts	Creates payment issues, contract changes, bid unbalancing, loss of overheads & profit	COST/TIME/CLAIM/DELAY
19	Resolution of Unforeseen Issues at lowest level		COST/TIME/CLAIM/DELAY
20	Labor Issues – Carpenters Union	Carpenters union has determined and sued to have all manufactured lumber products that are delivered to the project be constructed by union labor…this is not the intent of the offsite fabrication clause in the DIR labor requirements. Carpenters are also using DIR labor enforcement to force contractors to pay carpenters operating forklifts operator wages, or use an operator.	COST/TIME/CLAIM/DELAY
21	AB219	Requires all ready mix delivery drivers to be paid prevailing wage for time onsite and contractors to subcontract with ready mix suppliers (RMS) for the sole purpose to provide certified payroll. This could easily be expanded to force RMS to be full subcontractor and subject to union regulation/insurance/compliance issues.	COST/TIME/CLAIM/DELAY