



ADSC/WSDOT Joint Meeting
 January 31st, 2013, 8:30 A.M. – 11:30 A.M.
ADSC/WSDOT Meeting Minutes

Team Members

Attended	Member	Company	Phone	E-mail
X	Allen, Tony	WSDOT	360-709-5450	allent@wsdot.wa.gov
	Armour, Tom	DBM	253-838-1402	tarmour@dbmcm.com
X	Bauer, Mike	WSDOT	360-705-7190	bauerm@wsdot.wa.gov
	Bennion, Stuart	WSDOT	360-705-7468	bennios@wsdot.wa.gov
	Bill Binnig	Kiewit	253-943-4000	Bill.Binnig@kiewit.com
X	Clarke, Patrick	WSDOT	360-705-7220	clarkp@wsdot.wa.gov
X	Cuthbertson, Jim	WSDOT	360-709-5452	cuthbej@wsdot.wa.gov
	Deffenbacher, Jon	WSDOT	253-589-6100	deffenj@wsdot.wa.gov
	DiFabio, Vinnie	Paco	206-762-3550	vdifabio@pacoequip.com
X	Dinneen, Molly	DeWitt	360-576-8755	molly@dewittconst.com
X	Etheridge, Mark	DMI	206-793-3951	mark@dmidrilling.com
X	Foster, Marco ¹	WSDOT	360-705-7824	fosterm@wsdot.wa.gov
X	Frye, Mark	WSDOT	360-709-5469	fryem@wsdot.wa.gov
	Gaines, Mark	WSDOT	360-705-7827	gainesm@wsdot.wa.gov
	Groneck, Paul	DBM	206-730-4578	Paulg@dbmcm.com
	Hagy, Mike	PACO	805-746-6965	Mike@PacoEquip.com
	Kvinsland, John	Malcolm	253-395-3300	jkvinsland@malcolmdrilling.com
	Heinz, Mike	PACO	206-949-9369	mikeheinz@pacoequip.com
X	Johnson, Darrel	PACO	206-786-7584	djohnson@pacoequip.com
X	Khaleghi, Bijan	WSDOT	360-705-7181	khalegb@wsdot.wa.gov
	Lehman, Debbie	FHWA	360-753-9482	Debbie.Lehman@dot.gov
	McCutchan, Tait	Malcolm	253-395-3300	tmccutchan@malcolmdrilling.com
X	Olney, Chuck	Rainier Steel	206-949-7092	chuck@rainiersteel.com
X	Parmantier, Dominic ¹	CJA	206-575-8248	dparmantier@condon-johnson.com
X	Radom, Greg	DBM	206-730-1317	Gregr@dbmcm.com
X	Rasband, Al	Malcolm	253-395-3300	arasband@malcolmdrilling.com
	Stegeman, Dave	Kiewit	253-943-4121	David.stegeman@kiewit.com
	Sarhan, Anthony	FHWA	360-753-9412	Anthony.sarhan@dot.gov
	Sexton, Jim	DBM	253-838-1402	jims@dbmcm.com
X	Simmons, Greg	Kiewit	253-943-4000	GregSimmons@kiewit.com
	Starceвич, John	Malcolm	253-395-3300	jstarceвич@malcolmdrilling.com
	Tuttle, John	Sinclair	661-212-1223	tutmud@aol.com

¹ Team co-chair

Guests

Attendee	Company	Phone	E-mail
Mike Fleming	WSDOT	360-705-7830	FleminM@wsdot.wa.gov
John Starceвич	Malcolm	253-395-3300	jstarceвич@malcolmdrilling.com

Chris Heathman	WSDOT	360-709-5592	chris_heathman@hotmail.com
Todd Mooney	WSDOT	360-709-5463	Mooneyt@wsdot.wa.gov
Heather Zimchek	WSDOT	360-709-5562	ZimcheH@wsdot.wa.gov
Sa'ud Tayeh	WSDOT	360-709-5416	TayehS@wsdot.wa.gov

Meeting minutes were prepared by Mike Fleming, WSDOT Assistant State Construction Engineer.

1. Welcome/Review of Agenda

Marco F. opened the meeting and talked about email distribution that did not work this time. Members please verify email addresses to make sure we have current information. Marco summarized the agenda for today's meeting and had introductions due to several guests..

2. Review/Approval of November Meeting Minutes

There are no edits brought forth on the December meeting minutes.

Action: Post to web

3. Constructability Reviews – MTB Couplet Bridge; Davis Slough; Willapa River

Sa'ud Tayeh provided some background information regarding the MTB Couplet Bridge. He explained that there are 4 units of soil, approx. 60' down to rock (fill, alluvium, outwash, siltstone) with water present. There are fairly similar soil profiles across in the area. The shafts will socket into rock (weak rock, in order of 2000psi). Temp casing most likely be needed thru the fill but no permanent casing is anticipated. Silt content approx. 15 to 20%. Will temp casing be needed to get thru outwash? Why have temp casing installed all the way through unit 2? Drillers had some diverging opinions regarding the need for casing all the way down. There are no known utilities close to shafts. The shafts are located approx. 30' from I-5 with minimal existing embankment and 5% fines in the gravel layer. Advertisement is expected in the April/May timeframe.

Action: Sa'ud to provide more information with regards to gradations to determine if slurry will work. Dominic will provide formal response from ADSC.

Davis Slough – Geotechnical Office is seeking feedback on the temporary casing depth. The structure is single span. 4 each 8' diameter shafts approx. 100' in length will be constructed at each at each Pier. Good/fair access and work conditions are expected. A levee crosses the area. The upper 10' of ground is silt/organics, then alluvial/beach deposit then 15-20% silt/sand for 50-60', then well graded sand/gravel dense to very dense beyond that. The design assumes temp casing to 70 to 80' below ground to the gravels. The main question - is it needed? Can it be done with slurry in lieu of casing with only permanent casing at top? The plan tip elevation is approx. 97' into dense gravels. There are temporary geo-synthetic walls up to the bridges and abutments are approx. 10' above existing ground. Shafts do go within the flood plain but it is mostly dry except during wet periods where groundwater resides at the surface most of the time. Access on the east is easy and the west side is more difficult

with debris and environmental constraints. One question that came up was why not drive piles for ground improvements for foundations? Environmental restrictions and permitting restrict what's allowed here. Advertisement is expected in April/May timeframe.

Action: ADSC will review boring information and provide formal response back to WSDOT.

Willapa River – Same questions as the other two projects regarding need for temporary casing. The project is on SR6 near Raymond. There is approximately 15-20' of alluvium with low blow count, then heavy clays/siltstone, then rock. It's a 3 span precast girder bridge with 2 shafts per pier. The design currently anticipates 4 shafts with permanent casing (50' worth), and 4 shafts without permanent casing. Shaft sizes are 6' diameter at abutments and 8' diameter at intermediate piers. There's a need to go into the rock (approximately 20' with the casing) and the shafts need to socket another 15' to tip elevation. Permanent casing needs to tie into overburden soil and rock at bottom in the design, under-ream once to rock. Drillers expressed concern about feasibility getting into rock socket without creating clearance outside the casing with at least ¼" gapping. Intimate contact with rock/soil is not going to happen. Drillers asked about the potential to case to bottom then pull up and reset, then place cage to within 15' (+/-) of the bottom. WSDOT to re-analyze this for feasibility. The end piers use temporary casing within the top layer.

Action: Geotech will analyze the suggestion from drillers. ADSC will also provide formal response.

4. **ADSC/WSDOT Joint Training Workshop**

After discussing internally - Dominic and Marco determined there is enough interest to hold an ADSC/WSDOT joint training workshop in 2013. Currently, it is scheduled for May 7th (in Bothell) at the operating engineers building. Marco asked the group for suggestions/topics for the conference? Ideas that were thrown out by the group included; permanent steel casing capacity, ground improvements technology general presentation (soil mixing, jet grouting), shaft inspection in general, lessons learned/case studies (CRC test program, port of Tacoma), shotcrete in lieu of CIP, thermal integrity testing (state representative), shaft 101 construction presentation by drillers. Invitations will be extended to local agencies. It is anticipated to have about 6 or so presentations (split between contractor/WSDOT) with case studies in the afternoon. WSDOT offered to bring CSL equip and thermal testing equip as possible demonstration discussion (provide comparison). It was agreed that there would **not** be a panel discussion at end of meeting.

Action Items: Marco and Dominic to have agenda paired down by next meeting in March.

5. **Shaft Cage Design Changes**

Bijan Khaleghi – WSDOT has evaluating a modified cage design. The design considers accounting for permanent steel casing in capacity of the shaft design and we now have means and methods in accounting for it. Have two versions developed,

piles and shafts. Developed GSP's regarding some of these modifications. UW doing study regarding shear capacity etc. Another study NCHRP looking at confinement with casing and accounting for it in capacity. If there's interest in the details it can be found on the TRB web site. The GSP changes include welding specification changes. Willapa River project will be using this new specification.

Action: Bijan/Mike Bauer to share study information and draft GSP electronically with group.

6. Engineered pick of Drilled Shaft Cage

At the December ADSC meeting Stuart Bennion discussed the requirements of Section 6-19 requiring an engineered stamped plan for drilled shaft cages over 6' in diameter and 60' or greater in length. We have since then rescinded the requirement for a stamped plan but we are still requiring the remainder of the required drilled shaft submittal be submitted before the drill plan will be approved. There was general consensus amongst the group that this was acceptable/appropriate.

7. Review of the Drilled Shaft Submittal

Marco introduced the issue and asked what can be changed (or not) with regards to what we require in our drilled shaft submittal specifications? Discussions internally within WSDOT it been suggested that we may be requiring too much information. Jim Cuthbertson offered that we are approving portions of the submittal and we really don't know if the Contractor's equipment is appropriate or not and it is really not our responsibility to approve or disapprove. This should be the contractor's determination. The group had a general discussion about approvals, means & methods and implications with the approval. Mike B. mentioned that WSDOT had historically operated under Engineer approval of submittals as everyone involved in conventional design-bid-build projects understood what was meant by "approval". However, recent use of the design-build method of project delivery introduced new terminology and submittal processes that are bringing some confusion and causing WSDOT to evaluate what the process should be and how it should be different for different types of submittals. Mike suggested that HQ Construction Office needed to approach this as a global specification book issue as this was applicable to all types of submittals throughout the specification book. To focus on Section 6-19 exclusively was inappropriate. The group agreed that there's value in the content but how WSDOT handles it administratively is separate issue. The drillers agreed that the narrative is critical and the most important component of the submittal. One question raised was why do we have an experience requirement when you essentially never reject? What about prequalification of drillers or certification in lieu of what we currently have? ADSC could manage and certify drillers. A previous determination by the Attorney General Office was that it could be considered collusion. Drillers are interested in certification but it may not be achievable. The original intent was to demonstrate that the driller had correct equipment, process etc., to accomplish the work. The policy discussion with regards to approving or accepting a submittal will take place at the WSDOT/AGC administration Team. There was some agreement amongst the team to further

investigate the feasibility of ADSC certification and potentially drop much of our current standard specification requirements. This Spec modification issue will be deferred until more is understood about the potential to certify drilling contractors.

Action: Al R. will to report back on what industry is doing (nationally) in regards to certification. Marco to discuss approval with Craig McDaniel (WSDOT Const Policy)

8. **Other Items:**

a) Pumpable lean mix def. in Specification

One issue is strength problems but can be rejected because exceeding certain strength when it only requires in-situ strength (like CDF). Strength requirements for pump able mix.....Keep this on agenda.

b) Review of drilled shaft centralizers

Details for centralizers – problem is variation in what comes out to job versus what was detailed and planned. One issue is bar layout/design versus what is constructible (fabrication), possible to standardize the centralizer details although varies if using slip casing or not. Utilize a table to allow for selection of “z” dimension based on casing, dimensions, etc...

Action: Al to run through chart with industry and forward to WSDOT for finalizing

c) Update on Slurry disposal

Environmental office pursuing alternative infiltration methods with DOE (such as on-site disposal of processed water in general), suggested holding off on changes at this point.

9. **Synthetic Slurry Approval - QPL**

Several synthetic slurry products have been added to the QPL this last month. What process do we want to follow for adding future new products? Steve Hughes (QPL manager) is the contact for new submittals.

Action: no action

ADSC researching tip grouting effectiveness and results with FHWA research funding/support. Al to keep group informed of this work being done.

Meeting adjourned at 11:30

Future Meeting Date: Future meeting date set for March 14th and May 2nd.



ADSC/WSDOT Joint Meeting
 May 2nd, 2013, 8:30 A.M. – 11:30 A.M.
ADSC/WSDOT Meeting Minutes

Team Members

Attended	Member	Company	Phone	E-mail
	Allen, Tony	WSDOT	360-709-5450	allent@wsdot.wa.gov
X	Armour, Tom	DBM	253-838-1402	tarmour@dbmcm.com
X	Bauer, Mike	WSDOT	360-705-7190	bauerm@wsdot.wa.gov
X	Bennion, Stuart	WSDOT	360-705-7468	bennios@wsdot.wa.gov
X	Clarke, Patrick	WSDOT	360-705-7220	clarkp@wsdot.wa.gov
	Cuthbertson, Jim	WSDOT	360-709-5452	cuthbej@wsdot.wa.gov
X	Deffenbacher, Jon	WSDOT	253-589-6100	deffenj@wsdot.wa.gov
	DiFabio, Vinnie	PACO	206-762-3550	vdifabio@pacoequip.com
X	Dinneen, Molly	DeWitt	360-576-8755	molly@dewittconst.com
X	Foster, Marco ¹	WSDOT	360-705-7824	fosterm@wsdot.wa.gov
X	Frye, Mark	WSDOT	360-709-5469	fryem@wsdot.wa.gov
	Gronck, Paul	DBM	206-730-4578	Paulg@dbmcm.com
	Hagy, Mike	PACO	805-746-6965	Mike@PacoEquip.com
	Kvinsland, John	Malcolm	253-395-3300	jkvinsland@malcolmdrilling.com
X	Johnson, Darrel	PACO	206-786-7584	djohnson@pacoequip.com
	Khaleghi, Bijan	WSDOT	360-705-7181	khalegb@wsdot.wa.gov
	Lehman, Debbie	FHWA	360-753-9482	Debbie.Lehman@dot.gov
	McCutchan, Tait	Malcolm	253-395-3300	tmccutchan@malcolmdrilling.com
X	McDaniel, Craig	WSDOT	360-705-7823	mcdanic@wsdot.wa.gov
X	Morin, Dave	DMI	206-793-4470	dave@dmidrilling.com
	Olney, Chuck	Rainier Steel	206-949-7092	chuck@rainiersteel.com
X	Owen, Geoff	Kiewit	360-690-6548	Geoff.owen@kiewit.com
X	Parmantier, Dominic ¹	CJA	206-575-8248	dparmantier@condon-johnson.com
	Radom, Greg	DBM	206-730-1317	Gregr@dbmcm.com
X	Rasband, Al	Malcolm	253-395-3300	arasband@malcolmdrilling.com
	Sarhan, Anthony	FHWA	360-753-9412	Anthony.sarhan@dot.gov
	Sexton, Jim	DBM	253-838-1402	jims@dbmcm.com
	Simmons, Greg	Kiewit	253-943-4000	GregSimmons@kiewit.com
	Starcevich, John	Malcolm	253-395-3300	jstarcevich@malcolmdrilling.com
	Tuttle, John	Sinclair	661-212-1223	tutmud@aol.com

¹ Team co-chair

Guests

Attendee	Company	Phone	E-mail
Patrick Fuller	WSDOT	360-757-5991	fullep@wsdot.wa.gov
Heather Zimchek	WSDOT	N/A	zimcheh@wsdot.wa.gov
Todd Mooney	WSDOT	360-709-5463	mooneyt@wsdot.wa.gov

Meeting minutes were prepared by Stuart Bennion, WSDOT Assistant State Construction Engineer.

1. Welcome/Review of Agenda

Marco F. opened the meeting and talked about email distribution. Members please verify email addresses. The agenda was discussed and introductions were made.

2. Review/Approval of November Meeting Minutes

Mike B. identified that part of the Item 7 discussion was not captured correctly.

Action Items: Mike B. will provide adjustments and Stuart B. will correct and post to web.

3. Constructability Reviews – Hedrick Creek bridge Foundations

Heather Z. provided some background information regarding the Hedrick Creek Bridge Foundations. This project is on SR 542 near Mt Baker. The area is filled with rocks, cobbles, and boulders; some to the size of a house and with 10000 to 24000 psi compressive strength properties. Photos were provided of location, core locations, core samples, and a house size rock next to the creek.

- Do we design for smaller shaft sizes (3' to 4' diameter) or larger shafts (6' to 8' diameter)?

ADSC commented that obstructions are easier to get out of larger shafts. Have micro-piles been considered to accommodate cores where obstructions are not a problem? Getting capacity for micro-piles and resistance to scour are in question with micro piles.

Placing neat concrete in the micro piles with the rocks, boulder, and gravels is a concern. There is also a soil nail wall for temporary traffic alignment into one of these large house size rocks. The water and soil layers with gravels and fines are a concern for micro pile neat concrete placement and grout for soil nail wall in this area. The soil nail wall is only about 75' wide and there is a lot of rock in this section. A different wall type may be better.

Todd M. identified the soil material as medium dense silty gravel with some boulders and cobbles. Length is not yet determined, but likely placed below a silt layer about 70' down. Liquefaction, down drag, and settlement are still being investigated for some soil layers. If you do include design forces to account for settlement and down drag, then shaft lengths may be decreased and perched above the silty layers.

Spread footings are not considered due to scour effects in the area. Can the bridge be lengthened and place footings up on the bank further? This is complicated with traffic flows in the area.

Al R. stated large obstructions come out of 8' - 10' diameter shafts easier than 6' diameter shafts.

- There are three wing walls off the bridge. The plan is to place these utilizing soldier piles to get capacity and deal with scour. Typically, are these 3' diameter shafts?

Using a smaller shaft size would be better for this situation, even down to 24" if possible, since you cannot construct 8' – 10' shafts for this wall type.

- Temporary casing will be required through the boulders; does it need to extend to the bottom? Can you get them into boulders?

Recommend temp casing full depth due to fines, boulders, and scour. Some drillers may be able to do it otherwise, but need to see borings first.

Construction will be next June.

Action Items: Dominic P. will provide formal response from ADSC.

4. Specification Change – Slurry Level

Stuart B. identified an issue where permanent casing is tipped in soft soils and during concrete pours there is potential to have blow-outs if the water head and concrete head are both high. A graphic for tidal construction was used to discuss the need to lower water head as concrete pours near the top of the shaft. The WSDOT Specification does not allow this option for the drillers to mitigate this risk. Proposed is new language that both allows this consideration and re-organizes the requirements in a better format.

Action Items: Stuart B. will send the modified language out for review and comments.

5. Oscillator Casing Sizes

Stuart discussed a current design that is using 11'-0" diameter shafts. A request was made to Malcolm to know what size casing is available for this shaft size. An updated table has been generated by Al/Tate for Malcolm and is presented here.

Al R. identified that this table is for all companies that use this type of equipment. He provided some history on the current sizes available due to industry (Leffer, etc.). Patrick C. offered insight to the history of the BDM requirements.

The contracts are based on the inside diameter of the casing as the shaft size. Oscillator and rotator methods use the outside diameter. Stuart is working with the Bridge Office to update design policies, plan details, and specifications to better reflect options for construction both conventional and with an Oscillator/Rotator.

Action Items: Stuart will work with the Bridge Office to see what language needs to be changed.

6. Review of the Drilled Shaft Submittal

This discussion is ongoing from previous meetings. Issues discussed have been types of certifications available, the amount of requirements, what should be submitted, how the State processes this submittal, and if stamping/signatures are required. Stuart B. presented new language that clarifies the organization of the submittals, modification to the engineering requirement, and WSDOT's responses to the submittal. Correspondence to the Contractor will be in terms of conformance to the contract or rejection with justification.

Al R. reported back that industry is excited / interested in a certification process. Nevada is currently undergoing what Washington experienced some 15 years ago. Prequalification is a hot button that has legal implications to require, but certification is something that can be placed in contracts and enforced. It is a process of saying you have been properly trained and if work is not performed correctly the certification can be pulled. Industry is working to adopt this, though it is at least two years out. Both ADSC and AGP are talking about this in their task force meetings.

Dave M. identified that other industries are effecting this discussion and education is the process right now to get everyone on-board. Will WSDOT consider placing a practice requirement (say 3 jobs)? WSDOT decided to leave the language as is, but this question is why we are looking at industry to get a certification process in place, as a substitute for current requirements.

Action Items: Stuart will send the modified language out for review and comments.

7. Modifications to Obstruction Clause

Craig M. discussed his role in the State as HQ Construction Engineer, Policy. He will be attending all the task force teams to make sure we are updating our policy to stay up with industry. He is looking out for the public, what is the best value, and what is the risk allocation? The obstruction specification is based on historical practices and agreements, but it appears there has been an unbalancing of risk allocation. WSDOT does not want to get into the business of how to perform the Work. There is also the consideration for how the specifications read and how we have acted as an owner in the past.

The current obstruction specification process was outlined. The ADSC is choosing the work method and some methods may be impacted by obstructions and others are not. Dave M. pointed out that the Big 3 could deal with covering obstructions, but the little guys need this clause. It costs more up front to bring in the Oscillator, but less is paid in obstructions. Little companies come in with cheaper bids, when possible, but rely on the obstruction clause for part of their work.

The CRC dispute was used as an example. Both Craig and Al discussed how the project went, how the obstruction collapsed the casing, if a cutting shoe made a difference or not, how it was repaired and the DRB findings.

There are two issues to discuss:

1. Should the contractor be responsible for this work and obstruction costs for that work vs. the current contract language?
2. Is there an off-balanced bidding process for those who get paid for obstructions more often than others?

This morning case study is an example where obstructions are known. This should not use the obstruction clause as is. Dominic P. identified that the specification never made sense for locations where we know there are impacts/obstructions. This places too much responsibility on the State.

Site investigation will help. More information provides more assurance, but you can never know all until the shaft is constructed. Patrick C. identified some examples where more investigation helped and where it did not.

The State is looking for contractors to bid based on the information provided, and not depend on the obstruction clause. Craig likes the Op-in Op-out options based on historical obstruction pool of monies. Dominic P. pointed out that there will be more claims for differing site conditions. Dave M. asked if it could be based on a lineal foot or quantity measurement. Tom A. said the drillers could bid the risk, based on an assumed hourly rate. This will also lead to differing site arguments. A "Major Medical" event is being paid for every day emergencies, rather than the unique real emergencies. Al R. recommended looking at projects on a case-by-case basis and marries the specification to the known work.

Mike B. reminded the group that Bridge Shafts as defined in 6-19 are not the same as soldier piles, noise walls, and sign structure shafts. These might have to have an individual policy for each.

Patrick C. reminded the group of the design requirements vs. methods, specifically glory holes and telescoping and how this works with the seismic specification. This is the purpose of the owner review of submittals.

Action Items: Marco F. will send up a version of new language for the ADSC to review and provide comment on by the end of May. Any ADSC input, language from other States, etc. is appreciated.

8. Action Items:

a) ADSC Certification & Drilled Shaft Submittal

This is discussed in Item 7 (above).

b) Pumpable lean mix def. in Specification

Not discussed.

c) Review of drilled shaft centralizers

Not discussed.

9. ADSC/WSDOT Joint Training Workshop

Dominic and Marco discussed the ADSC/WSDOT joint training workshop scheduled for May 7th (in Bothell) at the operating engineers building.

Action Items: None

Meeting adjourned at 11:20

Future Meeting Date: Future meeting date set for June 13th.