

ADSC/WSDOT Meeting Minutes
5 November 2009

Team Members

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The meeting began at 8:30 AM at the WSDOT Corson Avenue Office.

Topics – Constructability Reviews for SR 542 Gallup Creek, Thomas Street Pedestrian Overpass, I-5 196th Street Interchange Braided Ramps, SR 529 Ebey Slough Bridge Replacement, I-90 Snoqualmie Pass Snow Shed Phase 1C.

1. Constructability Reviews

SR 542 Gallup Creek

Patrick Gallagher presented background on project. This project constructs a 1 span bridge that will be lengthened to 4 spans in the future. Pier 2 is designed as an abutment short term and an intermediate pier in the future. Pier 2 has a single column and single shaft. There are 2 shafts at Pier 1.

Discussion followed:

- Could shaft construction tolerance be reduced from 6” to 3”?
Alan Macnab replied no, this would be a problem.
- Could shaft be made larger to allow for 6” tolerance?

- Patrick replied it is currently 10' diameter.
- Does the column need to be square?
Yes for reinforcement.
 - Could column and shaft be the same diameter?
Patrick said he was told no by the Bridge Office.
 - Patrick asked if the existing piers near the new shafts were an issue.
The group replied it depends on the location of the existing piers relative to the new shafts. If they are in the way, they will be an obstruction.
 - Patrick said there was a one month in water work window.
The group replied this should not be a problem.
 - Patrick said previous scour repair was filled with concrete at P2. Should there be overexcavation to the bottom of existing obstructions?
Group recommended treating it as an obstruction and let Contractor figure it out. Overexcavation may do more harm than good.
 - What is offset from P1 existing footing to shaft?
Patrick said 4 feet.
 - Discussion on water level relative to shaft cap. Shaft cap may be in water some time of the year.
 - Patrick asked if P1 could be built through the abutment in 1 month.
Reply was to figure one week per shaft. This leaves 2 weeks for cap and abutment.
 - Alan Macnab questioned whether temporary casing was required as deeply as shown, particularly at P1.
 - Discussed permanent casing and casing shoring. Standard details should be OK.
 - Mo Sheikhezadeh noted that butt welds could be for column reinforcement.
 - Alan M said temporary casing may not be needed.
 - February 8, 2010 is the tentative advertisement date.

Thomas Street

Project team presented background on project. There are 4'-6" and 6' diameter shafts. There are 6' diameter shafts at the railroad tracks and 4'-6" shafts at the other piers. They are at the 90% design stage.

There is a large utility vault near Pier 10. The shaft is 1 foot away from the vault. The bottom of the vault is 12 feet deep. The vault is 10 feet in height. Alan M recommended exposing the vault when constructing the shaft. Al Rasband asked why 4'-6" diameter shafts were proposed? Reply was that was the required size for loads. Would 1.5 meter diameter shafts be acceptable? Yes.

There are 3 large sewer pipes near Piers 1 to 6A. The pipes are 102", 96" and 60" in diameter. The locations have been determined by as-builts only. The 102" is 3 feet away from shafts based on as-builts. Group replied that the pipes must be accurately located prior to shaft construction. Alan M asked if the pipes could be located by radar? Another suggestion was to use a diver.

Concrete rubble has been found less than 15 feet below existing ground. This would be no problem for an oscillator. For conventional the rubble could be dug out with an excavator prior to shaft construction.

There is the potential for petroleum product contaminated spoils. The Contractor would be expected to be compensated for added costs.

It appeared that an oscillator would not be required for this project.

Is full depth casing was required? WSDOT only specifies full depth casing when it is necessary.

What are soil types? The east end is glacial. The west end has 30 to 30 feet of fill over beach deposit, 5-10 blow count material.

Alan M said permanent casing may be required near utilities.

Would casing be required near railroad tracks? Group suggested this needs to be discussed with the railroad.

When will the project be bid? Scheduled for 2nd quarter 2010.

Discussed force account payment for obstructions. Alan M suggested this be discussed with Mo.

I-5 196th St Interchange Braided Ramps

Project team presented background on project.

Is it likely that a permanent cast-in-place would have a Cost Reduction Incentive Proposal submitted for it? Comments were precast panels could be proposed. If a form liner was specified in the plans then a shotcrete proposal would be a change

The project includes 3 to 4 foot diameter cylinder piles. The group asked why not soldier piles. The project team replied that this will be looked at in the design.

Precast concrete fascia panels were used on a recent I-405 project.

What are the temporary casing and slurry requirements? The plan is to use temporary casing down to the dense layer. Alan M agreed this would be about 15 feet of temporary casing.

There is 4'-3" between the face of the wall and the right of way line. This leaves about 6 inches clear between the edge of shaft and right of way line.

Discussed Wall 8 location and high voltage transmission line. Handout says 80 feet below line. Presentation shows 96. Need to stay 15 feet away from line. Due to length

of shaft, reinforcement will need to be spliced. Can the power be turned off? The project team said no.

Temporary casing should be approximately 20 feet.

The tentative advertisement date is February 2010.

SR 529 Ebey Slough Bridge Replacement

The project team presented background on the project. The bridge will be 4 span with 2 piers in the water and one in a wetland. The new bridge will be steel plate girders constructed 10 feet south of the existing structure. The roadway width will be 84 feet. There are ten 4 foot diameter piles at the end piers and four 6 foot diameter piles at the intermediate piers. The piles will be 150 to 250 feet long. Work bridges with finger piers are planned for the pier construction. The work bridge is planned to be 30 feet wide with 40' by 40' crane areas.

Discussed shafts versus piles and depth:

- Poor soils, low blow counts and 70 feet of liquefiable soils led to selection of piles.
- Tip grouting could be used.
- Should be able to keep excavation open below permanent casing with slurry.
- The required length is based on vertical capacity only. Alan M recommended fewer, larger shafts.
- Shorten if possible.
- In water work window is August through February.
- Alan M asked what temporary bridge piles will sit on? There is a layer down 30 to 40 feet that the temporary piles should bear on.
- What length of pile can be driver? Shafts can be constructed over 200'.
- Group consensus was to look at shafts instead of piling. Recommended larger diameter shaft, like 8' may be able to reduce the number of shafts.
- Is 30' wide work trestle wide enough? Comments were just barely, would prefer 40'.
- Oscillator will require reaction piles.
- Can cages be floated in on a barge? Maybe.
- March 2010 tentative advertisement date.
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I-90 Snoqualmie Pass Snow Shed

Project team presented background on project. The ad date is one year from now. The project will construct a new snow shed 1100 feet long and covering 6 lanes. A 45' wide work pad is planned. Project discussion followed:

- Alan M said that water level is important to know. Response was dam operations cannot be adjusted. Starting around July 1, the water level drops about one foot per day. Plan is to construct access bench and build shafts in August.
- Average lowest water level is about at rock layer.
- 20' to 30' penetration in to rock layer is required.

- Current design is 8 foot diameter shafts.
- There will be a W36x300 beam in the shaft cage.
- Casings will not be vibrated. Rotational method will be used.
- Should 10' or 8' diameter shaft be used? Alan M suggested 8' shaft and 7' rock socket to use currently available rock socket tools.
- Discussed of beam in shaft. Some commented they would wet set it, others said they would put it in the cage.
- Cage reinforcement is too tight as shown. Tim Moore said standard opening will be provided.
- Al R asked if there would be the ability to adjust rock socket depth while under contract? Tim M said that within the contract, the Contractor will drill at each shaft location to identify the rock location. Depth of rock socket would be 15 feet after removal of 5 feet of sloping rock.
- Rule of thumb is rock removal with a chisel is 6 inches per hour.
- Will rebar be weldable? Tim M replied yes, A706.
- Can alignment be maintained is beam is wet set? It is a concern for some in the group. Consensus was wet set should not be specified or prohibited.
- Will CSL testing be required? It is included in the current plan.
- There will be a lot of rock dust produced.
- Would double cages or thicker wall casings work? Tim M said these would not provide required capacity.
- Could cage be eliminated and beam enlarged? Tim M said they are looking at this.
- The group was asked if they had any concerns with tie backs and sloped rock? No concerns were presented.
- Discussed site specific shaft design based on information from drilling at each shaft location. The recommended that WSDOT consider doing this prior to bidding due to construction time constraints.
- Al R suggested drilling be done on low side if shaft since this information will determine the bottom of shaft.
- Consider lead times for beams.
- Cage would be constant diameter full height.

2. Review/Approval of September 2008 Meeting Notes

Revised prices were provided for Item 5. Meeting minutes will be revised to reflect this.

3. Holgate to King Project Update

Mo announced that 670 shafts will be deleted from this project by addendum. This addendum will come out today. The U-tube portion of the project is being deleted.

Future Meetings: January 7, 2010, 8:30 AM at the Lakewood Maintenance Facility.
 March 18, 2010, 8:30 AM at the Lakewood Maintenance Facility.
 May 6, 2010, 8:30 AM at the Lakewood Maintenance Facility.