ACEC/Maine DOT Bridge Design Subcommittee

MEETING MINUTES

9 December 2013

Attendees:  
David Sherlock  
Wayne Frankhauser  
Laura Krusinski  
Leanne Timberlake  
Chris Snow  
Jason Gallant  
Craig Weaver  
Steve Hodgdon  
Steve Percassi  
Keith Donington

Location: MaineDOT Room 317 A/B

Time: 1:00PM – 2:00PM

Notes Taken By: Jason Gallant

This was the fourth quarter ACEC/MaineDOT Bridge Design Subcommittee meeting.

> Information from MaineDOT

- The 2014-2016 work plan is being finalized. Approximately $80M is the anticipated funding. A number of projects are being added into the work plan with a focus on FY14 - FY15 to start PE or complete PE for projects partially funded under last work plan.

- The Load Rating and Posting Committee is in process of identifying some bridges for retrofit with rating factors less than 1 in lieu of posting bridges for less than legal loads.

- The 2014 program schedule has been set. Some project schedules suffered in 2013 due to sensitive species issues. The program delivered 93% of projects on time (the as advertised date) for the 2013 season

- The FHWA Seismic Design Workshop is scheduled to have a strong turnout of over 50 attendees.

- MaineDOT Bridge Design staff changes include Nate Benoit moving over to Multi-Modal as the Assistant Program Manager and the retirement of Roland Cote as the Fabrication Engineer.
Engineering Instructions are available for viewing on the department’s website at: http://www.maine.gov/mdot/technicalpubs/ci.htm

➢ Technical Topic (ongoing discussion) - Composite Action of Existing Bridges

➢ The Load Rating and Posting Committee has reviewed the U Maine research on the Batchelders Grant Township bridge, a steel girder bridge. The Committee is in process of drafting revisions to the Load Rating Manual with recommendations to use 75% composite action for bridges designed as non-composite.

➢ Technical Topic (ongoing discussion) – FRP Piles

➢ Ms. Krusinski provided an update on the ongoing research. The technology is scheduled for widespread implementation in 2015, pending further research and results of implementation on the Thomaston project in fall 2014.

➢ Test driving has been completed on four piles at the Richmond-Dresden Bridge and the piles have been pulled for inspection and integrity testing.

  ▪ Significant damage has been noted to pile tips and tops. – conditions have been documented with photographs.
  ▪ The Department is in process of setting guidelines for protecting the top of pile during driving with modifications to the driving cap.
  ▪ When driven hollow, failure was achieved at the cutting shoe (pile ‘broomed out’).

➢ The department is in process of developing geotechnical and structural design parameters / specifications. The target date for this is February 2014.

➢ Designer’s Meetings (Sept-Dec 2013)

➢ See attached

➢ Next Meeting Date

➢ March 18, 2014 at 10:00 AM, MaineDOT Conference Room.

Attachments:

Designer Meeting Minutes September-December 2013
I have attempted to summarize discussions held during this meeting as accurately as possible. If there are any items discussed herein that are misrepresented in any way, please contact me. In the absence of any corrections or clarifications, it will be understood that these minutes accurately summarize the discussions at the meeting.

Respectfully Submitted,

Jason Gallant
Designers Meeting Minutes

Wednesday, November 27, 2013
Conference Room 317 A&B
1:00-2:30 PM

Attendees: Mike Wight, Brian Reeves, Tyler Hjelm, Joel Veilleux, Garrett Gustafson, Wayne Frankhauser, Dave Sherlock, Roger Naous, Devan Eaton, Nate Benoit, Mark Parlin

1. Presenting Bridge Load Ratings in PDRs
   Devan Eaton
   As new bridge ratings are done, Pontis is being updated with HL-93 ratings instead of the old LFD trucks. The PDR templates need to be updated with labels for tonnage and ratings for both HL-93 and the controlling Legal Load. The Load Rating Summary sheets from available ratings should also be attached in an appendix to the PDR.

2. Epoxy Coated Bars in Transition Barriers
   Robbin Lanpher/Josh Hasbrouck
   The TB500(US)/TB1600(M) bars in Concrete Transition Barriers do not meet specifications for splice length on the front of the barrier when epoxy coated bar is used. They do meet minimum embedment length according to AASHTO code. Since the splice length cannot be extended due to the size of the TB550/TB1650 hoop, the standard detail should be modified to add a 90° hook to the TB500/TB1600 bars.
   A standard note should also be added or an existing one modified to specify that the rebar type in the transition barriers shall match the rebar in the curb.

3. Length of Transition Barriers on High Skew Bridges
   Robbin Lanpher/Brian Reeves
   On high skew bridges, the standard concrete transition barrier length is too short to allow the first guardrail post to be behind the backwall. This was a problem on Abbot, Page Carr Bridge (45° skew) where the transition barriers were lengthened in the field to fix the issue. Typically, this will be an issue on rehab projects where the alignment of the bridge is not being changed. When working on a bridge with a high skew, the designer needs to check the length of the transition barriers and modify their design as necessary.
4. **Gland Seals**  
Robbin Lanpher/Brian Reeves

The gland seal detail slopes down with the roadway and then back up at the curb, creating a spot where water and sand/salt collects. This leads to deterioration of the gland seal over time. Unfortunately, draining the gland seal to the outside of the bridge creates other maintenance problems, so the existing detail will remain standard. No action is required at this time.

5. **PCI New England Report**  
Brian Reeves

There have not been many changes in the PCI meetings recently. The biggest one is that the new double tee beam that is being designed will probably be called the NEXT E because the deck includes some reinforcing steel and is structural like the NEXT D, but only has a 4” slab the same as the NEXT F. The NEXT E will include one mat of reinforcing steel in the 4” slab, so only a 4” deck and single mat of reinforcing steel will be required on top to create a standard 8” deck. A 6” closure pour will be required between sections. The structural slab in the E beam will decrease the dead weight of the structure over the F beam that we have most often used (the F requires a full 8” deck pour on top), and the piece weight will be significantly lower for construction than the D beam which has a full 8” deck precast.

J.P. Carrara is considering acquiring forms to cast a decked bulb tee, and has asked whether states would want a NEBT beam, or whether the similar PCEF beam might also be accepted, since they could sell that outside of New England as well.

There has also been discussion about the need for designers to communicate with the fabricators about camber calculations since they depend on the concrete strength (the fabricators frequently decrease the casting time by using higher strength concrete than is required). Currently, we do our camber calculations using 6-8 ksi concrete, but 10 ksi is typical for the actual concrete strength used, so our camber calculations are always low. Brian will be doing more research on this topic, including whether we can either include concrete strength in the information the fabricator is required to give us or require the fabricator to calculate the actual camber based on concrete strength themselves.

6. **Flooding Special Provision**  
Mike Wight

For scour jobs and other small projects such as invert linings, the Adjustments For Delay (Delay Due to Flooding) Special Provision should be modified to use Q10 instead of Q25.
7. Scour Design for Integral Abutments
Nate Benoit

Recently, there has been some inconsistency in whether the piles for a bridge with integral abutments are designed for an unsupported length at maximum scour or whether the countermeasures are assumed to be effective and there is no unsupported length.

One problem with designing for unsupported length is that the scour depth equations are often very conservative. In addition, integral abutment bridges are typically longer than the existing span, decreasing the risk of scour. Since this is the case, and since any flood event large enough to completely remove the countermeasures will most likely also wash out the roadway, it is unlikely that the bridge will be required to carry live loads with unsupported length. Historically, most of the bridges have been designed assuming effective countermeasures, and there have been no issues with those bridges so far. The risk in assuming the scour countermeasures are effective is that in some situations the countermeasures themselves can be undermined, potentially creating an unsupported length.

Per the senior engineers, the current policy should be to design for countermeasures in place unless the water velocity is unusually high. Wayne Frankhauser, Mike Wight, and Laura Krusinski will review the guidance on integral abutments in the BDG to determine if any changes are necessary.
CONCRETE TRANSITION BARRIER

~ SECTION THRU RECESS ~
(3 - Bar Traffic / Bicycle Railing)

~ SECTION THRU STEM ~
(3 - Bar Traffic / Bicycle Railing)
~ SECTION THRU NOSE ~

(3 - Bar Traffic / Bicycle Railing)
# REINFORCING STEEL SCHEDULE

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**Notes:**

The first digit following the letters of the mark indicate the size of the reinforcing bar. (TB500 = bar size #5.) All dimensions are out-to-out of bar.

Quantities given are for one Transition Barrier.

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**Suppl. CONCRETE TRANSITION BARRIER**

Std. Detail

Supersedes 526(33)

May 2013
Designers Meeting Minutes

Wednesday, November 13, 2013
Conference Room 317 A&B
1:00-2:45 PM

Attendees: Joel Veilleux, Mike Wight, Roger Naous, Devan Eaton, Brian Reeves, Tyler Hjelm, Wayne Frankhauser, Garrett Gustafson, Bob Bulger, Joe Stilwell, Rich Myers, Josh Hasbrouck

1. LEAP Bridge Steel demonstration

A Bentley representative gave an introduction and short demonstration of their upcoming LEAP Bridge Steel software over a web video connection. The audio was poor quality, making the presentation less effective, but along with a few questions at the end, it did give a good idea of the overall capabilities of the software.

The software is intended to be a complete steel design solution, and will analyze any common steel superstructure types, including curved girders and boxes. It does both design and rating checks and the libraries can be customized for modified or legal loadings. It does not iterate the design to provide optimization.

The software is designed to integrate with other Bentley software, e.g. an alignment can be imported from InRoads at the beginning of the project. LEAP Bridge Steel does not have its own analysis engine, but converts its model and uses the STAAD analysis engine. RAM connection software is not integrated currently, but should be in the future.

A typical release cycle is twice a year. The first version should be available near the beginning of the year, definitely within the first quarter. It will not have FEM capability, but that will be added in the second version (sometime around July). There is a beta version available now for anyone who wants to test the software. The cost has not yet been determined, but there is a possibility it could be rolled into our current package agreement with Bentley.

From a department standpoint, the software looks like it would be useful, but we need to know cost. In addition, since it uses the STAAD analysis engine, LEAP Bridge Steel and STAAD could not be used for full independent checks of each other. Our LUSAS license was just renewed for another year, so we have until then to decide whether we need to maintain LUSAS for independent checks or not.
2. **PE renewal process**
   
   Michael Wight
   
   PE renewal is available online. For reimbursement, print a receipt and give it to Cindy. If doing it online does not work, talk to Cindy about what you need to do to get reimbursed.

3. **Draft cofferdam specification amendment**
   
   Michael Wight
   
   A draft cofferdam specification for use in Section 7 projects is included with these minutes. This special provision is specifically for use on Section 7 projects to deal with the special requirements for fish removal and defines liquidated damages for when the contractor repeatedly allows the cofferdam to overtop and department personnel have to spend extra time electroshocking and removing fish.

4. **Disc bearing design/specifications**
   
   Garrett Gustafson
   
   An issue came up the disc bearings used on Richmond/Dresden. The disks are tapered, and AASHTO code specifies that the smaller diameter be used as the plan diameter. R. J. Watson’s design calculations used the larger outer diameter instead and when it was brought to their attention, they responded that it was typical and sufficient to design using the outside diameter. In addition, the guidebars were made with filled PTFE rather than unfilled as was specified for “all PTFE” in a plan note, and they responded that it was typical to only use unfilled for the primary sliding surface. Garrett brought the issue up to ask how this should be handled in the future and whether the specification may need clarification. The general consensus, endorsed by Mike Wight and Wayne Frankhauser, was that designers should enforce strict compliance with the current code and plan note but without any need for additional specification.

5. **Alternatives to elastomeric bearings**
   
   Rich Myers
   
   There have been some construction delays caused by long lead times on elastomeric bearings and there is very little competition between competitors to keep costs and timeframe down. Because of their low maintenance, elastomeric bearings are still the preferred option for new design. For rehabs that have a short life span, however, steel sliding or rocker bearings may be a viable option.
SPECIAL PROVISION

SECTION 511

COFFERDAM

The following is added to subsection 511.04

The Department has budgeted for the following amounts of time for removal of fish from inside cofferdams:

<table>
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<th>Time</th>
<th>Supplemental LD</th>
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<tr>
<td>? Calendar Days</td>
<td>$1,000 per calendar day</td>
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If additional time is needed beyond the time stated above then the corresponding Supplemental Liquidated Damage will be deducted as they occur from the amounts otherwise due the Contractor. The Contractor will be notified by the Department when these times begin and when the allotted time will expire.

If the Contractor fails to properly maintain the cofferdam Supplemental Liquidated Damage will be deducted from the amounts otherwise due the Contractor even if the budgeted time has not yet be reached. Proper maintenance shall include but is not limited to the following:

1. Providing adequate fuel or power for pump(s).
2. Keeping intakes to pump(s) clean and free of debris.

The Department has up to 3 calendars days to remove fish from a cofferdam if it filled with water due to lack of proper maintenance.

Supplemental Liquidated damages shall not be applied in the following cases:

1. An Uncontrollable Event as defined in section 101.2.
2. A flooding event as defined in the Special Provision Section 109.5 Adjustment for Delay (Delays due to Flooding).
3. A weather related event meeting one of the following criteria:
a. 2 inches of precipitation within 24 hours that impacts the drainage basin of the drainage structure being constructed:
b. The National Weather Service issues one of the following warnings or advisories for part or all of the drainage basin for the drainage structure being constructed:
   i. Urban and small stream flood advisory
   ii. Flood Warning
   iii. River Flood Warning
   iv. Flash flood warning
   v. Coastal Flood Warning
   vi. Hurricane warning
Designers Meeting Minutes

Wednesday, October 16, 2013
Conference Room 317 A&B
1:00-2:15 PM

Attendees: Leanne Timberlake, Wayne Frankhauser, Laura Krusinski, Bob Bulger, Josh Hasbrouck, Joel Veilleux, Rich Myers, Joe Stilwell, Mike Wight, Devan Eaton, Garrett Gustafson, Brian Nichols, Tyler Hjelm, David Sherlock, Kate Maguire, Roger Naous, Mark Parlin

1. Bridge Unit Cost Database
Leanne Timberlake

The Bridge Unit Cost database has been kept up to date, but will soon need a new person to take care of routine updates if we want to continue to use it. Several people were not aware that it was up to date and have not been using it, so Leanne Timberlake gave a summary of what the database could do.

The database is set up to print reports of per square foot or linear foot costs with bid tabulations broken by structure type and size. It can generate the reports for a total project, a section of similar items (structure, substructure, etc.) within a project, or some individual items (e.g. cofferdams, bridge removal). It can also be used to view the pay items for a specific project, historical prices for a specific pay item, or lists of pay items by category.

In order to update, the bid tabulation data must be exported from the data warehouse to a spreadsheet. The spreadsheet then has to be imported to the unit cost database along with some extra bridge parameter information such as length and width.

Since the database breaks down the bid tabulations by structure type and size automatically and removes multiple steps from the process, the general consensus was that the database was useful and worth the time to be kept up-to-date. No one has been assigned to this yet, but someone with enough bridge experience to proof the results and understand which parameters to add to the bid tabulations for sorting is
needed. Wayne will be responsible for finding someone interested in updating the database.

R:\Bridge\Bridge_Public\$Common-Bridge\Bridge Unit Cost Database\Bridge Unit Costs1.mdb

2. Concrete protective coating
   Rich Myers

   There is a rewritten 515 - Protective Coating For Concrete Surfaces specification that will be included in the new Standard Specifications when it is republished. It changes the standard coating from linseed oil to a silane sealer selected from the Qualified Products List. Bridge program management and maintenance have both approved the specification and switching to using it, so, to keep all projects consistent, a special provision with the new specification should be added to all projects until the new Standard Specifications is published. Rich Myers will give a copy of the new specification to Coy Williams for inclusion in contracts. A redline copy of the new specification is included in the minutes.

3. Scour countermeasures update
   Michael Wight and Wayne Frankhauser

   There was a meeting recently between Bridge Program, Environment, Bureau of Project Development management and the Chief Engineer to discuss lessons learned from current scour projects and future plans. There are a couple of key areas that need to be changed in the design process: The type of countermeasure needs to be specified to simplify environmental permitting and make sure we know exactly what the impacts will be, and soil reports need to be checked so we can avoid fine silt and clay soils whenever possible. In many cases, a boring will not be necessary, but whatever data exists needs to be checked at PDR stage to determine if there are any concerns.

   Other info presented included that Mike Wight has updated the concrete block mat specification and will distribute it to designers working on scour projects. Partially grouted riprap (PGR) isn't accepted for general use until the test project (Knox, Knox Center Bridge) has been evaluated after high flows. In some cases PGR may avoid the need to excavate large boulders in the streambed since this method (unlike block mats) will easily work around obstructions. Grout mattresses are not a recommended solution since construction issues were identified on this year's test project (Weld, Foster Bridge) and they look ugly and unnatural. Flood elevations need to be clearly stated on the
plans along with a benchmark on the structure so that the resident can evaluate whether the water has reached flood conditions. For constructability and environmental questions, Mike Clark, Ryan Annis, Eric Shepherd, and Devin Anderson are all good resources and should be consulted with during the design of the project.

Several items have been brought up this year that need further clarification, such as using a consistent pay quantity for the concrete block mats, whether Q10 or another flood elevation should be used for extra time instead of Q25, limits on how many times the contractor can request electroshocking, calculating and planning for dredge quantities more accurately, the necessity or lack thereof of low flow channels and armoring the entire channel on some projects, and whether projects should be adjusted more in the field to fit conditions.

A copy of comments from various construction staff is included along with these minutes.

4. **Old bridge steel**  
   Wayne Frankhauser

   Maintenance is looking for old steel to use and either steel or aluminum bridge rail that can be reused. Designers should check with Ben Foster or John Buxton when those items are on their projects to see if the bridge removal and disposal specification needs to be modified.
SECTION 515 - PROTECTIVE COATING FOR CONCRETE SURFACES

515.01 Description This work shall consist of furnishing and applying a protective coating on concrete surfaces as called for on the Plans or as designated by the Resident in accordance with these specifications.

515.02 Materials Materials shall meet the requirements of Type Ic penetrating silane concrete sealers, from the MaineDOT Qualified Products List (OPL). —Section 711.05, Protective Coating for Concrete Surfaces.

515.03 Surface Preparation On surfaces to be treated, all voids shall be filled with mortar and the entire surface shall be dressed by dry rubbing to remove form marks and blemishes to present a neat appearance. The concrete shall remain dry for at least 48 hours before treatment and shall be free of laitance, oil, grease, dirt and dust. All traces of dust shall be removed immediately before applying the silane sealer, linseed oil mixture.

The treatment shall not be done until at least 14 days after casting the concrete, or in accordance with the manufacturer’s published recommendations, and completed at least 24 hours before the treated portion is opened to traffic.

515.04 Application The application rate and method of application shall be in accordance with the manufacturer’s published recommendations.

Enough material shall be used to coat the surfaces thoroughly. Two coatings shall be applied 24 hours or more apart. The minimum rates of application shall be 0.025 gal/ft² for the first coat and 0.015 gal/ft² for the second coat.

The method of application may be dependent on available equipment and the area involved. Hand-spray methods or pressure distributors may be used and application by rollers or brushes may be desirable under some conditions. Care shall be taken to prevent discoloration of areas and parts not requiring treatment.

Twenty-four hours after application, excess coating materials, if any, must be removed.

When practical, treatment of the concrete surfaces shall be completed before exposure to deicing salts. The temperature of the concrete to be treated shall be above 40°F at the time of application, or per the manufacturer’s published recommendations.

515.05 Method of Measurement Protective coating for concrete surfaces will be measured for payment by the square yard or lump sum unit as specified, satisfactorily applied and accepted.

515.06 Basis of Payment Protective coating for concrete surfaces will be paid for at the contract unit price per square yard or lump sum, as specified.
Payment will be made under:

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<td>515.21 Protective Coating for Concrete Surfaces</td>
<td>Lump Sum</td>
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2013 Scour Projects- Lessons Learned

From Phil Roberts:

Cable Mats. I suggest a SF unit price designated “plan quantity”. The Contractor provided “off the shelf” cable mats (4’X8’) that did not fit the side of pier dimension (10’) on the plans. Mats were cut and spliced together with the end result that more area was covered than what was called for on the plans. This was discussed prior to the start of construction and I informed the contractor that I would only pay for the area shown on the plans and they could go over at their expense or fabricate mats that would fit the design.

Traffic Control. Restrictions should fit the project location. Cross Lake allowed for a single lane of alternating traffic for 15” minutes after which a penalty applied for each 15 min block of time over. What can be done in 15 minutes? The impact of a lane closure at this location was a slow down for traffic.

Cofferdams. Clarify the definition of and/or expand cofferdam requirements/options for scour projects. Cross Lake used a modified cofferdam consisting of sand bags across the upstream end and corner and a turbidity curtain parallel to the flow and around the downstream end. This worked OK with the flow conditions, block mat option with minimal stream bed disturbance and a stream bed that was mostly rock. It was also very helpful to get input from Ryan and I suggest that the Residents be encouraged to consult with the environmental field people for suggestions, options and guidance.

When we allow work inside a cofferdam without dewatering, I think that pumping for negative water pressure and/or a double turbidity curtain would help at some locations. Cofferdams that are not dewatered will leak when work is done inside of them. Sometimes it’s minimal and sometimes it’s a problem and can require almost constant observation. I think that pumping for negative water pressure should be required for cofferdams that do not require dewatering for work. It is easier to accept minimal pumping that is working rather than direct that it be provided when needed and not required in the contract.

From Mackenzie Kersbergen:

The Clinton Project with N. F. Luce went very well.

I think it is very important to plan your cofferdam well. When the contractor put theirs in, it looked like overkill but when it rained for 2 days straight, it still breached. They didn’t lose too much time but they could have. N.F. Luce came up with a very good system of laying the mats with their mini excavator and a sheet of metal that was the same area as the mat. I’m not sure how other contractor’s chose to place them and if they struggled but it was just an observation. N.F. Luce also had to provide passage for eel migration. They used a 24 inch culvert pipe that also bypassed the stream flow. It worked very well and somewhat creative. I also had to add Erosion Control Mix Item to my contract, I don’t know if it would be beneficial to add that to the list of Items in the first place.
From Robbin Lanpher:

Four major points that were issues in Carmel:

- The pay quantity of cable mats were calculated based on the total area inside the environmental impact limits. As such it was high (estimate of 2,200 SF, paid 1,696 which was more than the footprint as I paid for an entire 4’x8’ mat even when blocks were cut off). The environmental impact limits were the maximum that we could impact which does not accurately show what the actual impact will be.
- The abutment/wingwall and cable mat interface detail is cloudy as it is specified as “tight fit”. What constitutes a tight fit (we used 2”) and the Contractor can use 1 of 3 methods to close the gap. The cable mat salesman wants concrete grout for the two rows of blocks next to the abutment & wingwalls so we should specify it that way.
- Using cable mats nothing is specified what will be done with the cables before backfilling with streambed material or gravel. If they are left sticking up it presents a tripping hazard for bridge inspectors or anyone else walking under the bridge. It should be specified that they be tucked under the blocks. I would be very careful about allowing the Contractor to cut off unused cables as they may be needed in the future if the ones with cable clamps are compromised.
- There is nothing in the specifications that limits how many times the Contractor can request electroshocking. In Carmel we electroshocked at least three times and had the electroshock crew onsite standing by at least another four times because the Contractor said they would be ready and they weren’t. It should be specified that the Contractor gets the first shocking free and then every time they request it again it costs them. The extra cost can be suspended by MaineDOT for an exceptional event at our discretion.

Two major points in Corinth:

- The specifications allowed for work in the wet under the cofferdam item but in the environmental permit it had to be done in the dry. This cost us an additional $60,000.00 over the bid pricing to add Portadam to the contract so we would not get in trouble environmentally.
- The method of measurement for stone blanket and making sure to have geotextile overlapping 3’ minimum while placing underwater is very difficult to ensure that the work is done correctly.
From Mike Pelletier:

I agree with the suggestion to make excavation incidental to the cable mat item. The construction sign and other traffic control device payment issue needs to be address. Personally I think each pin should be paid separately for contracts that are administered as multiples, but whatever, as long as there is language supporting either scenario. Include a rip rap item. I had to do a contract mod to add it in for two of my locations.

From Guy Hews:

Include soil boring from AS built bridge, confirm or deny marine clays. Consider protection only down too and not including the clay area.(even though they are available on line)
Calculate anticipated excavated dredge material more accurately rather than a general statement max 100cy.
Take a better look at where this qty of dredge can be beneficially re-used on site and plan that into the project, if not have a plan for disposing of it.
Add pay item for large tanker truck, to be bid on, in case needed to haul off material that cannot be filtered out.
Incentive/Disincentive for fast completion. Get in, get done, get out....less impacts. Less potential for longer term impacts.
Better review of cofferdam/plans and acceptance thereof.

From Mark Pinkoski:

I'm sure some of us will have the same ideas or issues, here are some of the points of interest: my three projects were Avon & Roxbury=block mats, Weld=underwater grout bags

1) if there needs to be a "Low Water Channel" have it mentioned, and drawn in on the plan drawings (this was also mentioned by the Contractor) not everyone brings their Special Provisions under a bridge when they are looking at a situation. The block mats can have issues if you are trying to make them "follow" the low water channel depending on your slope.

2) filling grout bags underwater (unless you are the dive team and equipped properly), once you fill them, and you are on any type of slope, the bags can and will roll on you, and with the water being "cloudy" you can't see it till it's too late.

3) plan drawings need to match the bridge, and have a scale that can actually be used in the field.

4) it was very helpful having Mike Clark available as often as he was.

5) I feel there should be something written in the General Notes on the Plan Drawings regarding "the Contractor should field verify all dimensions (example for block mats) prior to ordering materials. I think this could have helped in catching the "bust" we had on the Avon mats.

There were some good points also, when we needed to get something changed, there was always someone to turn to to discuss options, especially when something didn't work as planned.
From Gene Webb:

1. On contracts with more than one bridge, suggest a general note clearing up how the project signing will be paid for. Also, drums & cones.
2. Since excavation is a small quantity, make it incidental to the placement of the concrete mats.
3. On the projects I worked on, the footings were already exposed- why make the flow line of the channel two feet lower with a low flow channel?
4. Only 1 LS pay item for cofferdam when there were two cofferdams to be built.
5. Address in a general note how to clean up the area they use for a yard next to the brook.

From Eric Shepherd:

1. Payment for signs on contracts with multiple projects- need to clarify by Plan note. Note should say that we pay for all signs installed on each project, regardless if they are being done concurrently. Plans put out this year have led contractors to believe that they would be paid for all the signs, then we told them no, you only get paid for the maximum number of signs installed at any one time.
2. Pay for excavation as incidental.
3. Need note about dredge material- if it leaves site- how is it disposed of? Who pays for disposal? What are parameters for allowing it to be taken to an unlicensed waste area?
4. Extra wires- what must be done with them? Some Residents are allowing cutting, some are requiring them to be tucked under, some are requiring nothing to be done. What about the wires that connect- do these need to be folded under?
5. Permanent erosion control items- not included in some contracts- have had to be added. Should be bid items.
6. Overtopping of cofferdam- MaineDOT Biologist must electrofish each time cofferdam overtops. Should the contractor be charged for the cost of the biologist if it overtops for reasons that could have been controlled by the contractor (like letting the pumps run out of fuel)?
7. Regarding water elevations: Q25 was often not provided on plans; there were no benchmarks provided, either. The result is that there was no way for the Resident to easily know what the elevation of the water was or if it was over Q25 or Q50.
8. Plan dimensions of the concrete block mats were shown on some project plans, but not on others, or some dimensions were shown, but not enough to calculate quantity of mats- no easy way to calculate quantities.
9. There were errors on at least one plan set that resulted in the estimated quantity of block mats being way more than what was actually used.
10. There were errors in the computed quantities of block mats on some projects.
11. Payment for placing excavated material in final location- material is paid for under Common Ex, but it can't immediately be put in final location- it must be stockpiled and placed at the end of the project. Should there be a separate pay item for this, or pay using equipment rental items?
12. Water levels on several projects were high, which greatly impacted the work, but never reached Q25. Should there be a lower water level that would allow additional time to the contractor, such as Q10?
Designers Meeting Minutes

Wednesday, September 18, 2013
Conference Room 317 A&B
1:00-1:45 PM

Attendees: Joe Stilwell, Rich Myers, Garrett Gustafson, Bob Bulger, Brian Reeves, Tyler Hjelm, Roger Naous, Mike Wight, Kate Maguire, Brian Nichols, Roland Cote, Joel Veilleux, Josh Hasbrouck

1) Use of GFRP reinforcing in concrete deck
   Michael Wight
   15 minutes

   GFRP was used in Auburn (Littlefield) and the plan is to use it in Howland as well. Some questions have come up about the cover required, accounting for higher material strength, and whether this allows for a thinner deck. Rich Myers said he thought AASHTO 2013 interims covered higher material strength sufficiently and we should not need to specify anything additionally. The general meeting consensus was that 8" should still be the minimum deck thickness. Brian Reeves pointed out that this thickness is required on the overhangs for our crash tested rail, Garrett Gustafson that cost savings from decreasing deck thickness is unlikely to be significant, and Mike Wight that he would be concerned about the loss of stiffness with thinner decks.

2) Partially grouted riprap usage for scour countermeasures
   Michael Wight
   5 minutes

   There is a short-term moratorium on using partially grouted riprap for scour countermeasures while the Knox project is under observation. If it holds up well, then the specification may be revised to deal with the construction problems and offered as an option again. Concrete block cable mat is still the simplest construction and requires the least excavation.
3) MathCAD Training/Lunch & Learn
   Garrett Gustafson
   10 minutes

   The PTC rep has offered training classes to us available for free under the maintenance contract. The type and schedule is flexible, so Garrett requested feedback on what people were interested in. There was interest in having a Lunch & Learn with about half an hour of instruction on basic use and half an hour of question and answer. Suggested topics that people are interested in are matrix operations and simple programming.

   Garrett also has information on Prime 3.0 which he will send out. Prime 3.0 will be available later this fall, and individual people can switch if they want to without affecting the overall license.

4) Composite action for load rating non-composite beams
   Michael Wight
   (added topic)

   Some recent research has found 100% composite action on non-composite beams. Other research is ongoing, but there may eventually be an update to the Load Rating Guide to allow a standard percentage of composite strength to be included on non-composite structures.
5) **Snow Fence**  
Michael Wight  
(added topic)

If snow fence is required on a project, a specification must be included. Currently there is no standard specification or detail, but if there are projects coming up that require it, one may be created. Standard 2" spacing chain-link fence is too big to act as a snow barrier, so 1" spacing is recommended following the Turnpike Authority and some other states.

Designers should add the following notes to the plans when snow fence is used for overpasses:

The chain link fabric shall be 9 gauge steel, zinc coated conforming to AASHTO M 181 Type 1 Class D (ASTM A 392), aluminum-coated conforming to AASHTO M181 Type II (ASTM A 491), or 6 gauge aluminum alloy conforming to AASHTO M 181 Type III (ASTM F 1183). Chain-link fabric shall be knuckled on top and bottom. The size of the wire mesh shall be 1 inch.

Wire ties shall be standard round 9 gauge zinc or aluminum coated steel or 6 gauge aluminum alloy conforming to ASTM F 626. All ties shall be wrapped around chain-link fabric twice (double pigtailed) at both ends. Space ties @ 6" o.c. to bottom rail and @ 12" o.c. at all posts and other rails.