

New Hampshire Department of Transportation
BUREAU OF BRIDGE DESIGN
 Office Meeting Minutes – April 23, 2019

In Attendance (X):

<u>Administration</u>		<u>Existing Br Section</u>	<u>Design Section</u>
X	Bob Landry	LRL	NBG X David Scott*
	Lynn Paquette	LP	JTP X Joe Adams
			ACJ X Bill Saffian
			KLM X Jason Tremblay
			X Mike Mozer
			X Bob Juliano
			X Mike Licciardi
			X Tony Weatherbee
			X Sue Guptill
X	<u>Trainees</u>	Jerry Zoller	JSZ X
	Katie Irwin	KMI	X Pete Parenteau
			X Angela Hubbard
			X Chelsea Noyes
	<u>Guests</u>		X Kevin Daigle
			X Phil Brogan
			X Mark Wagner
			X John Sargent
			X Jackie Hozza
			19 Total

* Moderator

Items: DLS presentation

1. The Stickney Ave building needs to be emptied of all archived items. Where the items will go is undetermined at this time. Overtime is available to move boxes and sort through them. (300+ boxes)
2. It has been requested that a list for the 3 year work plan for programmatic be developed since a legislator requested a project be created to address a bridge that was already scheduled for work in a programmatically-funded project.
3. WPS was a panel member for the NCHRP research report 895 “Simplified Full-Depth Precast Concrete Deck Panel Systems.” The report can be found electronically in the Bridge Design library on the S: drive. A TRB webinar will be held to discuss the report on April 30th.
4. The Stewartstown-Canaan 15838 project is being submitted for award considerations and a letter from the Stewartstown Selectboard was sent which praised the work that was done on the project.
5. AASHTO Agenda Items
 - a. ANW reviewed the T-4 agenda which updated the *LRFD Guide Specifications for Bridge Temporary Works* which had minor changes to the wind loading to match ASCE 7.
 - b. WPS reviewed the T-5 agenda which revised the loads and load distribution for the *LRFD Bridge Design Specifications* and there were no significant changes.

- c. ABH reviewed the T-9 agenda which adopted the new *Guide for Design and Construction of NSM Titanium Alloy Bars for Strengthening Concrete Structures*. Titanium reinforcing is highly resistant to corrosion and strong but is expensive. It can be used to strengthen concrete beams by surface-mounting the reinforcing.
- d. WPS reviewed the T-9 agenda for bridge preservation which adopted a new manual called *Historic Bridge Preservation Guide Specifications*. The manual covers items for preserving historic bridges which the DOT is already considering through our Cultural Resources.
- e. JAT reviewed the T-9 agenda which adopted a new manual called the *Guide Specification for Service Life Design of Highway Bridges*. The specification classifies components into four different categories of renewable, normal, enhanced and maximum to determine the service life necessary for components. The specification talks about the deterioration mechanisms and common mitigating approaches along with protection strategies for concrete structures, steel structures, foundations and retaining walls. The guide specifications also include a chapter on calculating the life cycle cost of a bridge.
- f. MJM reviewed the T-9 agenda item which adopted the new manual titled *Guide to Bridge Preservation Actions*. The guide discusses actions that can be taken to preserve bridges and how to implement them along with the financials involved with the preservation.
- g. DLS discussed the T-10 agenda for concrete design which had a few changes for design. One change is that the lateral spacing of ties in compression members is reduced from 48 inches to 24 inches. Section 5.9.4.3.3 for debonding strands was also completely replaced and one change in it was the limit for debonding strands was changed to increase the limit from 25% to 45%.
- h. PAB discussed the T-12 agenda items which covered changes to the *Structural Supports for Highway Signs, Luminaires and Traffic Signals Specification*. One change is inspection for cracking at the toe of welds for round tubes to the transverse plate is being removed since it has not been observed but will still be required on multisided tubes where it has been observed at the corners. The equations for calculating the design stress with combined forces were changed in order to more accurately calculate stresses in highway lighting and traffic support structures.
- i. JAS and JEH reviewed the T-13 agenda for the design of culverts which had minor clarifications, but one comment that was added for design is that a K value of 1.0 may be used for design if construction controls are implemented and deflection of the culvert is measured at least 30 days after backfill is completed. Typically, a K value of 1.5 is used in design to be conservative. JAS mentioned that using a value of 1.0 is not a good idea since if the inspection shows deflections exceed the design limits the DOT would not make the Contractor remove and rebuild everything and the DOT would be left with an inadequate design. JEH mentioned that this is just additional guidance for the designer to give them design options but is not a necessary requirement and a factor of 1.5 may still be used.
- j. RAJ and WPS reviewed the T-14 agenda which covered the *Steel Bridge Erection Guide Specification*. There were minor updates to the guide specifications which updated plans, code references, bolting specifications and falsework requirements. The guide specification also has a useful checklist that will point out things to look for when reviewing erection plans.
- k. KFD reviewed the T-14 agenda item which discussed the *Guidelines for Steel Girder Bridge Analysis*. This document provides useful information for designing skewed and curved bridges. It should be used when trying to determine the level of analysis needed for steel girder bridges and design implications when a bridge is skewed or curved.

- l. ANW reviewed the T-14 agenda which made changes to various articles in the *LRFD Bridge Design Specifications* Section 6. Changes were made to box beam design methodology in order to give greater consistency in design. There were extensive changes proposed for the code.
 - m. PAB reviewed more changes to various articles to section 6 of the *LRFD Bridge Design Specifications* proposed by the T-14 technical committee. The proposed changes affect the calculation of the shear lag factors for tension members to bring them up-to-date with the latest AISC provisions. There were also changes to the language for bolted field splices. It was mentioned that NSBA has a program that can be used for designing bolted field splices for the updated code requirements.
 - n. T-15 agenda items covered substructures and retaining walls and was sent over to M&R to review. Changes are proposed for the design of MSE retaining walls to improve the requirements for internal stability design of MSE walls.
 - o. KMI and JTP reviewed the T-18 agenda items which updated example problems for the *Manual for Bridge Evaluation*. The examples were updated to give better correlation of results between the examples in the MBE and bridge analysis software.
6. ANW had a consultant submit an alternate approach slab detail to use with a semi-integral abutment. The detail came from MassDOT. The idea is to have the approach slab not be fixed at the abutment backwall and to instead have the expansion joint at the abutment and approach slab interface. The NHDOT approach slab detail has the approach slab fixed at the abutment and then the other end is on a sleeper slab where the expansion joint would be placed. NH is not very interested in using the MassDOT detail.
 7. KMI gave a wrap up of her training experience in Bridge Design over the past couple of months and detailed the wide variety of knowledge that she gained.

Round the Table:

SMG:

- If additional survey is requested for a project then an email will have to be sent to Bill Caswell in order to get the survey processed for use in OpenRoads. Stephen LeBaron will only process the information for use in MicroStation.

CKN:

- Questioned what the official policy is now with transmittals since construction submittals are coming in through Bluebeam now. Do transmittals still need to be created within the bridge database and filed away? DLS said this would be looked into.

WPS:

- WPS attended the World Steel Bridge Symposium in the beginning of April. A few points that were worth mentioning from the symposium include:
 - When doing heavy lifts for girder erection it is best to use a spreader bar because it helps by self-adjusting and shifting the loads. If a lift is done using multiple slings that meet at one pick point and one of the slings is too long, then the load will not self-adjust and the other slings could be overloaded.
 - The AISC code is written so built up girders and rolled girders have the same lateral torsional buckling capacity, but recent research has shown that the code currently overestimates the capacity for built up members. The research is being submitted to AISC for consideration of code change to provide design guidance for both built up and rolled girders. Unsure if or how this may affect AASHTO.

- For drilled shaft cages, other states have added the hoop bars to the longitudinal steel as the longitudinal bars are lowered into the hole. NHDOT ties the whole cage together before lowering everything into the hole.

Prepared by: KFD

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