State-Aid Bridge News

January 14, 2003

- **Introducing the State Aid-Bridge Web Page**

The State Aid-Bridge Office is proud to announce the launching of their new web site. The site can be accessed at http://www.dot.state.mn.us/bridge/StateAidBridge/index.html. Some of the highlights of the web page include a handbook of guidelines for designing bridges, answers to frequently asked questions and a photo album of unique bridges that have been reviewed by our office. Included in the handbook are

- The criteria that we use in our unit to review bridge plans
- The process that the State Aid-Bridge Office follows when reviewing plans
- Guidance on bridge type selection, including the pros and cons of different beam types
- Links to various web sites that will assist in hydraulic design, bridge railing design, standard sheets and special provisions

We hope you find the site useful when working on bridge projects. Contact us at bridgestateaid@dot.state.mn.us with any comments or questions.

- **Scour Coding New Bridge Structures**

Every November and April MnDOT must report the scour codes of all bridges in the state to the FHWA. This information is stored in the Bridge Inventory System. In creating the report for this year, it was noted that all new bridges without a scour rating shown on the construction plans were given a scour code of F (No evaluation done).

To assure the proper scour code is used for our new bridges we are now requesting that the designer of the bridge also rate the bridge for scour. Please put the MnDOT Scour Code directly on the plan in the Hydraulic Engineer's Recommendation Block.

The designers are already putting the scour elevation in that block, just add the approximate scour code to that information. The scour code information should be entered as follows.

ie. scour code: L

- **Prestressed Concrete Beam Curved Cast Bearing Assembly Alternate**

The Bridge Office in conjunction with the Metal Casting Industry has developed new curved cast bearing assembly details. These details provide an alternate to the traditional welded curved plate bearing assemblies. These new cast assemblies are to be used with the 12"X24" bearing pads only.

Our smallest bearing pad is now 12"x24", the 8"x's and 10"x's should no longer be used unless approved by the State Bridge Engineer. It's our hope that this effort will economize the fabrication process, and enhance product availability during peak times of bridge construction.

To incorporate the cast bearing assemblies into the PCB bridge plan, the following steps should be taken.

1. Pay item "Bearing Assembly" remains unchanged on the plan. However, we advise that a reference symbol be placed adjacent to pay item "Bearing Assembly". The reference symbol will indicate that payment for curved plate bearing assembly or at the contractors discretion, curved cast bearing assembly alternate will be made under pay item "Bearing Assembly".

2. The bridge special provisions should include the special provision write up for cast bearing assemblies.

3. Insert detail no. B317 (PCB Fixed Curved Cast Bearing Assembly) & B318 (PCB Expansion Curved Cast Bearing Assembly) into the plan along with detail no. B310 & B311 (PCB Fixed & Expansion Curved Plate Bearing Assembly).

- **State-Aid Bridge Costs**:

The average cost per square foot for the routine cast-in-place slab span bridge is approximately $75.00/SF, and $85/SF for a prestressed beam span bridge. The SA Bridge Office has put together a cost summary for local bridge construction for fiscal and calander year 2002. This report will be distributed to the counties at the 2003 MCEA. The square foot costs shown in the report can be used to roughly approximate current trends in bridge costs, but they are not necessarily representative, as all projects are unique.

- **Bond Fund Projection**

$40 million was available in Bridge Bonds at the beginning of 2002. 168 Bridges have been approved using at least some bond funds in that time. Another $15 million in Bond Funds appropriated by the 2002 legislature remains on hold pending the outcome of this legislative session. Looking ahead to 2003, the remaining available Bridge Bond funds will likely be depleted by August of 2003. The next normal capital bonding cycle would begin in July of 2003, with funds becoming available approximately May of 2004. This will result in an 8-9 month gap, during which time projects will be placed on a waiting list. If the $15 million on hold is released, there may be no funding gap. Please feel free to contact Mark Gieseke (State Aid Program Delivery Engineer) at 651-296-7679 if you have any questions regarding bridge funding.

- **Rectangular Prestressed Beam Bridges**

Authorization has been given by the State Bridge Office, and the FHWA to incorporate Rectangular Prestressed Beam Bridges into our Local Bridge Inventory. These beam bridges are an alternative to the slab span bridge. The advantages of the rectangular beam bridge is reduced construction time, longer span lengths at minimized structure depths, and, at times, can reduce the number of substructure units. The available depths are 14", 18" and 22".

If requested, SA Bridge will continue to provide the PCB beam runs for the M shapes, and now the rectangular shapes. We will provide beam runs until the new LRFD process is implemented, approximately 4 months. The new Mn/DOT LRFD design manual should be published sometime in early spring. After everybody is comfortable with the LRFD PCB design process, we will turn the responsibility of designing beams over to the Local Consultants. The beam designs should use an approved design program endorsed by the State Bridge Office and our local precasters. All Consultants will probably be doing beam designs by the summer of 2003.

Preliminary costs suggest that the rectangular beams will run around $85-95/LF. We do know that Elk River Concrete is now producing them. As a comparison, our new 27M PCB goes for around $100/LF.

- **State Aid Bridge Contacts:**

	Phone #
Dave Conkel State Aid Bridge Engineer	651-747-2151
Petra DeWall Assistant State Aid Bridge Engineer	651-747-2152
Brian Homan Assistant State Aid Bridge Engineer	651-747-2153
Dena Quade Graduate Engineer (9/3/02 thru 1/31/03)	651-747-2154