

**ATTACHMENT 59 – ANSWERS TO STANDARD SET OF QUESTIONS BY THE  
TENNESSEE DOT**

(3 pages)

## Tennessee DOT

July 1, 2008

Italics represent the responses by the Tennessee DOT.

**1. What was your procedure in reviewing consultant engineering bridge plans in the early 1960's? What is your procedure in reviewing consultant engineering bridge plans today?**

*Basically, the review procedures in the early 1960's, and those currently, do not differ substantially. Preliminary layouts with type size and location are submitted for review and approval. Once any corrections are made, the consultant proceeds with final design and contract plans preparation. Preliminary final plans are submitted for review by TDOT bridge staff, usually managerial and supervisory staff in our design groups. The plans review consists of a study of the details and overall plans content, and for consistency with TDOT format. Marked plans are sent for correction. If details are of questionable nature, the consultant will be asked for specifics regarding reasons or design methods used. We do not closely scrutinize the design notes from the consultant.*

**2. How do you ensure the QA/QC process of a consultant engineering firm is adequate? In the early 1960's and today? What procedures are in-place to ensure that the consultant does not submit an inadequate design?**

*Again, our procedures are no different today than in the early 60's. The consultants are fully responsible for their own work product and are liable for errors and omissions. A review of the submitted plans by experienced TDOT Staff is our only additional means of assurance of adequacy. We do not independently design a consultant's bridge as a check. Future consultant contracts will have provisions for the consultant to rate bridges after design using the AASHTO Load and Resistance Factor Rating Manual, as is now a requirement for in-house designs by TDOT staff. This procedure will provide another tool to guard against inadequate designs.*

**3. What does the Tennessee DOT consider a red-flag item when reviewing consultant engineering bridge plans? What follow-up action is taken to address the red-flag item? Describe the level of detail the Tennessee DOT uses in reviewing consultant engineering bridge plans?**

*Our reviews of consultant plans would scrutinize the size and patterns of reinforcement for structural concrete members and size and distribution of plates for structural steel girders in comparison to like structures designed and constructed by TDOT Staff. Any significant deviation from the norm would be flagged for inquire with the consultant, as discussed in item 1, above.*

**4. Does the Tennessee DOT review consultant engineering bridge plans concurrently with the FHWA Division Office? Does the Tennessee DOT review the consultant plans with the expectation that FHWA will be performing a similar type of review?**

*First, the FHWA only reviews plans for bridges on the National Highway System, in Tennessee. All other federally-funded projects are handled by the optional certification acceptance procedures established by FHWA. Exceptions may occur, based on FHWA's discretion, if a federally-funded bridge is of unusual design or exceeds \$25 Million in cost. We do not approach our reviews with any preconceived notions to the thoroughness of FHWA reviews.*

**5. What are the qualifications of the Tennessee DOT personnel who conduct the review of consultant engineering bridge plans?**

*All reviewers of consultant bridge plans are TDOT Structures Division Managers, Supervisors or more senior bridge designers. All are engineering graduates, nearly, if not all, are licensed professional engineers, with ten to thirty years of hand-on design experience.*

**6. What is the percentage of bridge design work that is done in-house versus the percentage that is done by consultant engineering firms?**

*Through the 1970's and early 80's, the Division of Structures designed over 80 percent of its bridges in-house. The trend since that time has been to increase our in-house designs to be 95 percent or more, annually.*

**7. Describe the structure of the Tennessee DOT? Is the bridge office centrally organized? How many district bridge offices are located in the state? Are consultant engineering bridge plans reviewed at the central office or district bridge office?**

*All bridge design, as well as bridge rating and evaluation of all bridges on public roads in the State, are centrally located at headquarters and housed under the Division of Structures. All bridge inspection crews are disbursed statewide, reporting to one of the four Regional Bridge engineers at a Regional Headquarters, under a Regional Director. All consultant contracts for bridge design are handled within the TDOT headquarters, and supervised by the Division of Structures Staff.*