North Carolina Engineering Law and Ethics for Bridge Engineers

Tennessee bridge engineers practice under T.C.A. Title 62, Chapter 2 and the Board of Architectural and Engineering Examiners' rules in Chapter 0120, including Rule 0120-02-.08 on seals. This one-hour course covers registration, seals, responsible charge, firm registration, conduct, discipline and public-works liability (Claims Commission, GTLA, four-year repose) with TDOT bridge examples. Not legal advice.

Learning objectives

- Identify the North Carolina practice act, board rules and board
- Apply North Carolina seal, signature and responsible-charge rules to bridge plans, load ratings, inspection reports and repairs
- Explain firm authorization, conduct rules and discipline in North Carolina
- Recognize public-works liability and repose rules affecting North Carolina bridge work

Why engineering law matters on a Tennessee bridge

Most bridge engineers learn the technical rules of their work in detail: the AASHTO LRFD Bridge Design Specifications, the Manual for Bridge Evaluation, the National Bridge Inspection Standards, and the TDOT manuals that sit on top of them. Far fewer have read the law that governs who may do that work at all. In Tennessee that law is the engineering practice act, Tenn. Code Ann. Title 62, Chapter 2, together with the rules adopted by the Tennessee State Board of Architectural and Engineering Examiners (Tennessee AE Board) under Tenn. Comp. R. & Regs. Chapter 0120. Those two documents decide who may call themselves an engineer, who may sign and seal a load rating or a set of bridge plans, what a seal actually certifies, how a consulting firm must be registered, what conduct is prohibited, and what the board can do when something goes wrong.

The practice act matters more in bridge work than in many other fields because bridge documents have long lives and many readers. A sealed load rating may control whether a school bus is allowed to cross a structure for the next decade. A sealed set of TDOT plan sheets becomes the record drawings that the next inspector and the next rater rely on. A repair detail drawn in a hurry after a truck strike may be built, forgotten and then discovered, unexplained, during an inspection fifteen years later. In each case the seal on the document tells everyone downstream that a licensed professional took responsibility for the engineering. If the seal was applied carelessly, to work the engineer did not control or did not understand, the problem is not only technical. It is a violation of state law that can cost the engineer their license.

This course walks through the Tennessee practice act and board rules topic by topic and ties each topic to the situations bridge engineers actually face: sealing inspection and load rating reports, preparing and revising DOT plan sheets, supervising inspection teams and junior engineers, working through a consulting firm on a DOT contract, and handling the pressure that comes when a finding is inconvenient. It summarizes official, free sources: the statute as published by the state legislature and the rules as published by the board or the state register. It is not legal advice and is not a substitute for reading the current text. Statutes and rules are amended, sometimes every legislative session, so confirm any section number below against the version in force before you rely on it.

Credit status: this is an online self-study course offered as general professional development. It has not been reviewed or approved by the Tennessee AE Board, and LoadPath PDH does not claim board approval. Whether it counts toward any Tennessee license requirement is for the licensee to confirm with the board.

How Tennessee's engineering law is organized

Every state's engineering law has the same basic structure, and knowing the structure makes it much easier to find an answer quickly.

- **The practice act (statute).** In Tennessee this is Tenn. Code Ann. Title 62, Chapter 2. The legislature writes it. It defines the "practice of engineering," creates the board, sets the basic requirements for licensure, requires seals, sets out grounds for discipline and penalties, and lists exemptions. Because it is a statute, only the legislature can change it.
- **The board rules (regulations).** In Tennessee these are Tenn. Comp. R. & Regs. Chapter 0120. The board adopts them under authority the statute gives it. Rules fill in detail: seal design and size, which sheets must be sealed, how electronic seals work, what "responsible charge" means in practice, the rules of professional conduct, firm registration procedures, and continuing education. Rules have the force of law.
- **The board itself.** The Tennessee State Board of Architectural and Engineering Examiners (tn.gov/commerce (Regulatory Boards)) licenses individuals and, where required, firms; investigates complaints; holds disciplinary hearings; and publishes guidance, FAQs and newsletters. The board is a joint board for architects, engineers, landscape architects and interior designers, administered by the Department of Commerce and Insurance.
- **Other law that touches engineering.** Procurement law (how public agencies select engineers), tort and claims law (who can be sued and for what), statutes of repose (how long after construction a designer can be sued), public records law and state ethics law for public employees all affect bridge engineers, even though they are not in the practice act.

When a question comes up, a good habit is to check the statute first for the basic rule, then the board rules for detail, then the board's published guidance for interpretation. If the three do not answer it, ask the board directly in writing. Boards generally answer questions about their own rules, and a written answer is far better protection than a colleague's recollection.

One structural point catches many engineers: the practice act regulates *individuals and firms*, not projects. TDOT manuals tell you how TDOT wants a bridge designed, inspected or rated. The practice act tells you whether you are allowed to do that work and what your seal means. Following TDOT procedure does not satisfy the practice act by itself, and following the practice act does not satisfy TDOT procedure. Bridge engineers need both.

Licensure: who must be licensed in Tennessee

The core of every practice act is a prohibition: no one may practice engineering, or offer to practice engineering, or use the title "engineer" in a way that implies licensure, unless they hold a license from the board. The statute then defines the practice of engineering broadly, usually as any professional service that requires engineering education, training and experience applied to the design, evaluation, planning or inspection of public or private works, where the public welfare or the safeguarding of life, health or property is concerned.

T.C.A. Title 62, Chapter 2 prohibits unlicensed practice and title use and defines engineering practice; exemptions are in the statute. Only Tennessee registrants may submit plans for review to Tennessee building and engineering offices, according to the board's published FAQ.

The usual path to licensure in Tennessee, as in most states, runs through an ABET-accredited engineering degree, passing the NCEES Fundamentals of Engineering (FE) exam to become an engineer intern (EI), several years of progressive engineering experience (typically four) under licensed engineers, and passing the NCEES Principles and Practice of Engineering (PE) exam. Bridge engineers usually take the PE Civil exam (often the Structural depth) or the 16-hour Structural Engineering (SE) exam. Licensure by comity or endorsement is available for engineers already licensed in another state, and many boards accept an NCEES Record to speed that process. Check Tennessee AE Board's current requirements for the exact experience and exam rules, which change from time to time.

What licensure means for bridge roles. The practice act and the NBIS overlap but are not the same thing:

- **Load rating.** The NBIS (23 CFR 650.309(c) and 650.313(k)) requires that load ratings be performed by, or under the direct supervision of, a registered professional engineer. Load rating is also squarely the practice of engineering under the Tennessee act. A rating that will be relied on in Tennessee should be sealed by an engineer licensed in Tennessee.
- **Bridge design and repair design.** Preparing plans for a new bridge, a widening or a structural repair is engineering practice. The engineer who seals those plans must hold a Tennessee license.
- **Bridge inspection.** The NBIS allows a team leader to qualify through several routes, including a PE license with training, or NICET or inspection experience without a license. Collecting condition data under TDOT's program is generally treated as inspection under the federal program, not as unlicensed engineering practice. But *engineering judgments* made from that data, such as whether a member is adequate, whether a posting is needed or what repair to specify, are engineering, and the person making them must be licensed or working under a licensee's responsible charge. Inspectors should be careful not to present structural conclusions as their own engineering opinions unless they are licensed.
- **Program managers.** The NBIS requires each state's Program Manager to be a registered PE (or meet other qualifications). The Tennessee act applies to that person's engineering decisions in the same way as to anyone else.

Government employees. Some states exempt engineers employed by government agencies from licensure for work on the agency's own facilities; others do not, or limit the exemption. Even where an exemption exists, TDOT positions that seal plans, ratings or reports normally require a license as a condition of the job, and federal-aid projects and NBIS roles require registered engineers. TDOT Structures Division positions that seal plans or ratings require Tennessee registration in practice.

Use of title. Signing an email "Bridge Engineer" or putting "Engineer" in a job title on a report cover can raise issues under title-protection provisions when the person is not licensed. Many agencies and firms use titles such as "Engineer Intern," "Bridge Inspector" or "Designer" for unlicensed staff for exactly this reason.

Seals and signatures under Tennessee law

The seal is the most visible part of the practice act and the part bridge engineers use most. Its meaning is set by statute and rule, and it is worth knowing precisely.

What the Tennessee rules say. T.C.A. §62-2-306 requires a registrant's seal, and Rule 0120-02-.08 (Seals) sets its design and use. The registrant must stamp all original sheets of any bound or unbound set of working drawings or plans, and the original cover or index pages identifying all specification pages covered. Rule 0120-02-.08(8) allows rubber-stamp, embossed, self-adhesive or electronically generated seals and electronically generated signatures and dates, provided the registrant uses a secure method and does not authorize anyone else to affix them. The board's FAQ states that a Tennessee registrant may seal only plans prepared by the registrant or under their responsible charge — not plans prepared by an out-of-state designer.

What the seal certifies. In every state, the seal, signature and date certify that the document was prepared by the licensee or under the licensee's responsible charge (or "direct supervision," "complete direction and control," or similar wording), and that the licensee accepts professional responsibility for the engineering in it. The seal does *not* mean the engineer personally drafted every line. It does mean the engineer controlled the work, reviewed it, had authority to change it, and stands behind it.

Common seal rules that apply in Tennessee and most states:

- Seal, sign and date the final version of engineering documents before they are released to a client, public agency or contractor.
- Do not seal work you did not prepare or control. Reviewing someone else's finished work is not the same as having had responsible charge of it, unless the rules specifically allow sealing after a complete independent check.
- Mark preliminary documents clearly (for example "Preliminary — not for construction") rather than sealing them, unless the rules require something else.
- Never seal after your license has expired or lapsed, and never let anyone else use your seal or electronic signature.
- Keep electronic seals and signature certificates secure, and report a lost or stolen seal to the board.
- When several engineers contribute, each seals the portion they were responsible for, and the sealed sheets make clear who is responsible for what.

Electronic and digital seals. Bridge documents are now almost always delivered electronically, through TDOT's plan production system, a document management system or a load rating database. Tennessee allows electronic seals and signatures subject to conditions in its rules, generally that the signature be unique to the engineer, verifiable, under the engineer's sole control, and linked to the document so that any later change invalidates it. A scanned image of a seal pasted onto a PDF, without a secure digital signature, may not satisfy those conditions. Check TDOT's electronic plan and signature requirements as well: owners frequently specify the signature technology they will accept.

Sealing bridge documents: plans, ratings, inspections and repairs

Applying the seal rules to real bridge deliverables raises practical questions that the rules rarely answer in so many words. The following are the situations bridge engineers ask about most often, with the reasoning that the Tennessee rules point toward. Where TDOT has its own requirement, follow both.

TDOT plan sheets

Bridge plans for TDOT lettings typically include general plan and elevation sheets, foundation layouts, substructure and superstructure details, reinforcing schedules, bearing and joint details, and TDOT standard drawings. Each original sheet prepared by or under an engineer must carry that engineer's seal, signature and date as the Tennessee rules require. TDOT standard drawings and standard details are a common source of confusion. The standards were prepared and approved by TDOT; the project engineer did not prepare them. Most rules allow the engineer to *select and incorporate* standards, provided they are clearly identified as standards and the engineer's seal on an index or title sheet indicates that the engineer reviewed and adopted them for the project. The engineer does not personally certify the original design of the standard, but does take responsibility for choosing it and for its suitability on this bridge.

Revisions after letting, such as a redesigned pile cap after a driving problem, are themselves engineering documents. They should be sealed by the engineer responsible for the revision, with the revision clearly identified, dated and described. Do not let a revised sheet go out carrying only the original seal and date if the original engineer did not prepare or control the revision.

Load rating reports and rating files

A load rating is engineering analysis that the owner uses to decide posting, permits and sometimes closure. The rating report, or the rating summary sheet that TDOT requires, should be sealed by the licensed engineer who performed or directly supervised the rating. Practical points:

- Seal the final rating, not a draft, and make sure the sealed version matches what is entered in the rating database and the NBI/SNBI submission.
- If a technician built the model in rating software, the sealing engineer must have actually supervised the work and checked the inputs: section properties, dead loads, condition and section loss, live load models and factors. Signing off on a software run without understanding it is the classic way engineers get into trouble.
- Document assumptions, especially where plans were missing and the rating relied on field measurements, engineering judgment or load testing.
- When a later inspection changes the condition, the earlier sealed rating is not wrong, but it may no longer represent the bridge. A new or revised rating, separately sealed, is needed when ${DOT} procedures say so.
- If another engineer reviews or QCs the rating, the reviewer does not normally seal it unless the reviewer took responsible charge. The QC record is a separate document.

Bridge inspection reports

Whether an inspection report must be sealed depends on what it contains and on TDOT's procedures. Condition ratings, element quantities and photographs collected under the NBIS are generally inspection data rather than engineering design. Many owners, however, require a PE to review and sign or seal reports, particularly for fracture-critical (nonredundant steel tension member), underwater, complex or damage inspections, or reports that include recommendations for repair, load restriction or closure. Any part of a report that states an engineering opinion, such as "the bent cap is inadequate to carry legal loads" or "the bridge may remain open with a 15-ton posting," is engineering and should be made by, and attributed to, a licensed engineer. A team leader who is not licensed should report the condition and the critical finding and leave the structural conclusion to the structural engineer.

Repair plans and emergency repairs

Repairs after vehicle strikes, scour events or fatigue cracking are often designed under time pressure. The law does not relax because the situation is urgent. The repair still needs to be prepared under the responsible charge of a licensed engineer, and the final documents still need to be sealed. In emergencies, engineers commonly issue a sealed sketch or letter with the essential details, then follow up with a complete sealed record drawing. Field changes made by a contractor's superintendent are not engineering unless an engineer approves them; if the change affects the structure, call the structural engineer of record (or the engineer TDOT designates) before the work is built.

Shop drawings, falsework and contractor submittals

Contractors' engineers often seal falsework, shoring, demolition and erection plans, and fabricators' engineers may seal connection designs. The engineer of record's review stamp on a submittal is not a seal of that work. Keep the distinction clear in the review language so that responsibility stays with the engineer who designed the temporary works.

Responsible charge and supervision

"Responsible charge" (some statutes say "direct supervision" or "direct control and personal supervision") is the legal idea that lets one licensed engineer seal work prepared by a team. It is also the idea most often misunderstood.

Tennessee's rules define responsible charge and the board's FAQ applies it directly to out-of-state plans.

Across states, the common elements are:

- The licensee directs the work from the beginning, not only at the end.
- The licensee has continuing, meaningful involvement while the work is prepared: setting criteria, answering technical questions, reviewing intermediate products.
- The licensee has the authority to make engineering decisions and changes, and does so.
- The licensee reviews the final product closely enough to accept professional responsibility for it.
- The people doing the work are employees of, or under contract to, the same firm or agency, or are otherwise under the licensee's real control.

Bridge examples. A TDOT district bridge engineer who assigns ratings to an in-house technician, sets the rating approach, reviews the model, and checks the results can properly seal those ratings. A principal at a consulting firm who never saw the inspection data, never talked to the team leader and first opened the report on the day it was due cannot properly seal the engineering conclusions in it simply because their name is on the contract. An engineer who receives a complete set of plans prepared by an unlicensed person outside the firm and is asked to "stamp them" cannot do so; that is often called plan stamping and is a common basis for discipline in every state.

Reviewing another engineer's work. Sometimes an engineer must take over a project after the original engineer leaves or dies. Most states allow a successor engineer to seal the work only after taking full responsibility, which generally means a complete independent review and check, enough to make the work their own, and documenting that review. Simply changing the name in the title block is not enough.

Remote and distributed teams. Bridge work is now done across offices and sometimes across states. Responsible charge does not require the engineer to be in the same room, but it does require real control and real review. Keep records: check prints, model review notes, emails answering technical questions. If a board ever asks whether you had responsible charge, those records are your answer.

Firm registration and practicing through a company

Tennessee requires firms offering architectural or engineering services to register with the board (firm registration / certificate of authorization), with a Tennessee registrant in responsible charge.

Why it matters for DOT work. TDOT and other owners verify licensure when they select and contract with consultants. A firm that offers engineering services in Tennessee without the required authorization may be practicing unlawfully even if every engineer on the project is individually licensed. Firms that grow by acquisition, change their legal name, open a new branch or reorganize should check registration status immediately; a lapse can affect existing contracts and invoicing. Subconsultants on TDOT bridge contracts need their own authorization where the law requires it.

The designated engineer. Most firm-registration schemes require a licensed engineer to be designated as responsible for the firm's engineering in the state. That person has real legal exposure: if the firm practices outside its competence or lets

unlicensed staff make engineering decisions, the board may look to the designated engineer as well as the firm. Engineers asked to serve in that role should understand what the firm is doing in Tennessee and should not lend their name to a branch office they do not supervise.

Marketing and proposals. Proposals and statements of qualifications are "offers to practice." Listing engineers who are not licensed in Tennessee as the responsible engineers, or implying a firm can perform work it is not authorized to do, can itself violate the act. Check that key personnel in a TDOT proposal hold Tennessee licenses or will obtain them before work begins, as the solicitation requires.

Conduct and ethics rules for Tennessee engineers

The Tennessee AE Board rules include rules of professional conduct that are enforceable law, not aspirations. Tennessee's Rules of Professional Conduct are in Chapter 0120-02. The core obligations closely track the NCEES Model Rules and the NSPE Code of Ethics:

- **Public safety is paramount.** The engineer's first obligation is to the safety, health and welfare of the public. If an engineer's judgment is overruled in a way that endangers life or property, the engineer must notify the employer or client and, where appropriate, other proper authority.
- **Competence.** Engineers may only undertake and seal work in areas where they are qualified by education or experience. A competent highway designer is not automatically competent to rate a steel truss or design a seismic retrofit.
- **Honesty and objectivity.** Reports, statements and testimony must be objective and truthful and include all relevant information. Omitting a critical finding to keep a client happy is a violation.
- **Conflicts of interest.** Engineers must disclose conflicts and avoid them where they cannot be managed. An engineer should not inspect or approve work in which they or their firm have an undisclosed financial interest.
- **Gifts and solicitation.** Engineers must not offer or accept gifts or other consideration to obtain work or in connection with work they review or approve. DOT employees are also bound by state ethics law and agency gift rules, which are often stricter.
- **Reporting violations.** Many rules require or encourage licensees to report known violations of the act by others to the board.
- **Cooperation with the board.** Licensees must respond to board inquiries and investigations.

Bridge pressure points. The ethical situations that bridge engineers report most often are predictable: a client or supervisor who wants an inspection finding softened, a rating "rounded up" to avoid a posting, a schedule that leaves no time for a proper check, a contractor who offers hospitality to the inspector of their work, or a request to seal work prepared by someone else. In each case the conduct rules give the engineer a clear answer and a basis for saying no. Document the issue, raise it in writing through your chain of command, and if the danger is real and unresolved, escalate to the owner's bridge program manager or the appropriate authority. Public employees should also know their agency's whistleblower protections.

Public employees. TDOT engineers must also follow the state's ethics law for public officers and employees and TDOT's own code of conduct. Those rules usually cover gifts, outside employment, use of state resources, post-employment restrictions (for example, limits on working for a consultant on matters you handled at the agency) and financial disclosure. The practice act does not replace them; both apply.

Discipline: process, grounds and illustrative bridge cases

How discipline works. The Department of Commerce and Insurance investigates complaints; the board may enter consent orders or hold contested-case hearings under the Uniform Administrative Procedures Act. Orders are published by the department. The general process in every state is similar: a complaint (from the public, an owner, another engineer, or the board's own staff) leads to an investigation; the licensee is notified and asked to respond; a technical reviewer may evaluate the work; the matter may be resolved by consent agreement or go to a formal hearing; and the board issues an order. Final orders are generally public records and are often published in the board's newsletter or on its website, and many are reported to NCEES and other states where the engineer is licensed.

Typical grounds include practicing without a license, fraud or deceit in obtaining a license, gross negligence, incompetence or misconduct in practice, sealing work not prepared under responsible charge, aiding unlicensed practice, violating the rules of professional conduct, felony convictions related to practice, discipline in another state, and failing to meet continuing education requirements. **Sanctions** range from a reprimand and civil penalty through probation, required coursework or peer review, suspension, and revocation. Practicing without a license can also be a crime.

The following cases are **illustrative composites invented for teaching**; they are not actual Tennessee AE Board decisions. They are drawn from the kinds of violations that boards nationally report in bridge and structural practice.

Case 1 — The unchecked rating (invented). A consultant engineer seals forty culvert load ratings in one afternoon to meet a TDOT deadline. A technician produced them from a spreadsheet template; the engineer reviewed the summary table but not the inputs. A later audit finds that the template used the wrong fill depth for a third of the culverts, overstating capacity. Issues: sealing work without responsible charge, negligence. Likely result: civil penalty, required coursework and peer review of future ratings, possibly suspension if a culvert had been left open to loads it could not carry.

Case 2 — The softened report (invented). An inspection firm principal edits a team leader's draft to change "section loss with holes through the web at bearing, recommend immediate load restriction" to "moderate corrosion, monitor." The principal seals the report. Issues: misleading statements, failure to protect public safety, possibly failure to report a critical finding as the NBIS and TDOT procedures require. Likely result: suspension or revocation, and the firm may also face action.

Case 3 — The out-of-state stamp (invented). An engineer licensed only in a neighboring state seals repair drawings for a county bridge in Tennessee, assuming comity is automatic. Issue: practicing without a Tennessee license. Likely result: cease-and-desist order and civil penalty; the county may need to have the drawings independently checked and resealed by a Tennessee licensee.

Case 4 — Lapsed license (invented). A TDOT engineer forgets to renew and continues sealing plan revisions for four months. Issue: practicing and sealing with a lapsed license. Likely result: penalty and reinstatement conditions; TDOT must decide whether the affected documents need to be resealed.

The department's regulatory board pages list disciplinary actions.

Public works, procurement and liability

Bridge engineers work almost entirely on public works, and several bodies of law outside the practice act shape their exposure.

Qualifications-based selection. Federal-aid engineering contracts must be procured by qualifications-based selection under the Brooks Act as applied by 23 U.S.C. 112 and 23 CFR Part 172. Tennessee also has its own procurement law for professional services. TDOT selects firms on qualifications, then negotiates a fair price. Engineers should not offer price as a selection criterion where QBS applies, and must not offer gifts or contingent fees to win work.

Sovereign immunity and tort claims. Claims against the State of Tennessee for negligence go to the Tennessee Claims Commission (T.C.A. §9-8-301 et seq.), which has jurisdiction over listed categories including negligent care of state highways and dangerous conditions on state property, with damage limits. The Governmental Tort Liability Act (T.C.A. §29-20-101 et seq.) governs counties and cities. Private consultants are not covered.

Standard of care. In a negligence claim against a design or inspection engineer, the question is whether the engineer exercised the degree of care, skill and diligence that a reasonably prudent engineer would exercise in similar circumstances. Engineers are not guarantors of perfect results. Compliance with AASHTO, the NBIS and TDOT manuals is strong evidence of meeting the standard of care, but not a complete defense if the circumstances called for more. Conversely, the practice act and board rules are often cited as evidence of the standard of care.

Statutes of limitation and repose. Tennessee's statute of repose for improvements to real property (T.C.A. §28-3-202) bars actions against designers and builders more than four years after substantial completion, with a limited extension for injuries in the fourth year.

Design-build and P3. In design-build delivery the designer usually works for the contractor rather than the owner. The engineer's duties under the practice act do not change: the engineer of record must still seal only work under their responsible charge, must not let the contractor's schedule override safety, and must identify themselves clearly on the plans. Several boards have issued guidance stressing that the engineer's obligation to the public comes before obligations to a contractor-employer.

Records and public information. Bridge inspection reports, ratings and plans held by TDOT are public agency records, although federal law (23 U.S.C. 407) protects certain safety data from discovery and use in litigation, and some states withhold critical infrastructure details. Write every report as if it may be read by a jury, a reporter and a board investigator: factual, specific and professional.

Tennessee specifics to remember

Tennessee points for bridge engineers:

- **Short repose.** Tennessee's four-year repose (§28-3-202) is among the shortest in the region.
- **No sealing out-of-state plans.** The board's FAQ is explicit that a Tennessee registrant may not seal plans prepared by an out-of-state designer.
- **TDOT Structures.** TDOT's Structures Design Guidelines and memoranda set consultant plan and rating requirements.

Worked bridge scenarios under Tennessee law

These scenarios are invented to show how the Tennessee rules covered above apply to everyday bridge work. They are not board decisions, and the answers are this course's reading of the published rules, not legal advice. When the facts are close, ask the Tennessee AE Board or your own counsel.

Scenario 1 — The load rating spreadsheet from a former employee

A consultant rating TDOT bridges finds that a load rating spreadsheet for a two-span prestressed girder bridge was built by an engineer who has since left the firm. The project manager asks a licensed engineer to "just seal it" so the rating package can go out this week. The rule of thumb in Tennessee, as in every state covered in this series, is that the seal certifies the work was prepared by the licensee or under their responsible charge (or the state's equivalent wording). The engineer did not supervise the spreadsheet as it was being prepared. To seal it lawfully, the engineer must make the rating their own work: check the input against the plans and the latest inspection report, confirm section losses and condition ratings, review the live load models and factors in the TDOT rating manual, rerun or independently check the controlling members, and document that review. If they cannot, the package should not be sealed. Under the Tennessee rules on seals described earlier — T.C.A. — the documentation question is not academic; it is what an investigator will ask for.

Scenario 2 — An inspection report with an engineering recommendation

A NBIS team leader who is not a PE writes a routine inspection report for a county bridge in Tennessee. The report records condition ratings, photographs and quantities and recommends that the bridge be posted for reduced load because of advanced section loss in a steel stringer. Recording conditions under the NBIS is the team leader's job, and the NBIS sets the qualifications for that role. The posting recommendation, however, rests on structural evaluation: it is a load rating conclusion. In Tennessee that conclusion should come from a licensed engineer who evaluates the bridge and seals the rating or recommendation as TDOT and the board's rules require. The practical fix is to route the finding to the program's load rating engineer immediately, treat it as a potential critical finding if it meets the program's definition, and let the structural engineer decide on posting. The team leader did not do anything wrong by flagging it; the error would be issuing a posting decision without engineering review.

Scenario 3 — Field change during a deck repair

During a deck patching and joint replacement contract on a TDOT bridge, the contractor finds the existing joint armor anchorage is different from the as-built plans. The resident engineer asks the designer of record to approve a modified anchorage detail by text message. A revised structural detail is engineering work. Under Tennessee's rules it should be prepared by or under the responsible charge of a licensed engineer, and the revision should be issued with the seal, signature and date that the state's rules require for revisions and addenda — several states in this series state explicitly that revisions and field changes must be sealed. A text approval with no sealed sketch leaves the contractor, the agency and the engineer exposed. A short sealed sketch and a revision note on the plan set, issued through the agency's change process, is the lawful path.

Scenario 4 — An out-of-state engineer and a standard detail

A firm based in another state wins a TDOT bridge replacement and assigns a strong designer who is not yet licensed in Tennessee. A Tennessee-licensed principal is asked to review the plans at the end and seal them. Under Tennessee's rules on responsible charge — Tennessee's rules define responsible charge and the board's FAQ applies it directly to out-of-state plans. — an end-of-project review is generally not enough. The Tennessee licensee needs real control throughout: assigning the work, reviewing it as it progresses, and having and using the authority to change it. Alternatively the designer can obtain a Tennessee license (often by comity through an NCEES Record) before sealing. Standard TDOT details used on the plans are a separate question: they are adopted standards, and the engineer of record is responsible for selecting and correctly applying them, identified as the state's rules require.

Scenario 5 — A claim after a crash

A vehicle strikes a bridge rail on a TDOT route and the injured driver sues, alleging the rail was improperly designed. Claims against the State of Tennessee for negligence go to the Tennessee Claims Commission (T.C.A. §9-8-301 et seq.), which has jurisdiction over listed categories including negligent care of state highways and dangerous conditions on state property, with damage limits. A private consultant who designed the rail is not protected by the state's immunity, but time limits may apply: Tennessee's statute of repose for improvements to real property (T.C.A. §28-3-202) bars actions against designers and builders more than four years after substantial completion, with a limited extension for injuries in the fourth year. Good project records (design criteria, crash-test level selected, approvals and sealed calculations) are the designer's best defense, whatever the forum.

What the scenarios have in common

Each scenario turns on the same few questions. Who actually did and controlled the engineering? Is the document final, preliminary, or a revision, and what does Tennessee require on it? Is the firm authorized to offer the work? Is there a record that would show an investigator what happened? Ask those questions before you seal, and most Tennessee board problems do not arise.

A practice-act checklist for Tennessee bridge engineers

Use this list before you seal or release a bridge document in Tennessee:

- My Tennessee license is current, and I know my renewal date.
- My firm holds any authorization Tennessee requires, and its designated engineer knows about this project.
- I prepared this work or had responsible charge of it from the start, and I can show records of my involvement.
- I am competent in this type of work (for example, steel truss rating, seismic design, underwater inspection).
- Standards and TDOT standard drawings are clearly identified, and my seal shows that I selected them.
- Seal, signature and date meet Tennessee AE Board rules, including electronic signature requirements, and TDOT's submission requirements.
- Preliminary documents are clearly marked and not sealed.
- Revisions are sealed by the engineer responsible for them.
- Critical findings and safety concerns are reported promptly through TDOT's procedure; nothing material has been omitted or softened.
- No gift, favor or undisclosed interest affects my judgment on this project.
- I know whom to call at the board if I have a question about the rules.

None of these items is complicated, and most engineers get all of them right most of the time. Discipline cases almost always involve an engineer who skipped one of them under schedule or client pressure. The practice act exists so that the public can trust a sealed bridge document without checking it themselves. Treat your seal accordingly.

Key takeaways

- Tennessee's engineering law is Tenn. Code Ann. Title 62, Chapter 2 plus the Tennessee AE Board rules (Tenn. Comp. R. & Regs. Chapter 0120); both have the force of law.
- A seal certifies the work was prepared by the engineer or under their responsible charge — never seal work you did not control.

- Load ratings, bridge plans and repair designs relied on in Tennessee should be sealed by an engineer licensed in Tennessee; structural conclusions in inspection reports belong to a licensed structural engineer.
- Identify TDOT standards clearly; seal revisions by the engineer responsible for them; mark preliminary documents.
- Firms offering engineering in Tennessee must meet the state's firm authorization rules.
- Conduct rules require honesty, competence, conflict disclosure and putting public safety first; DOT employees also follow state ethics and gift rules.
- Know Tennessee's tort-claims and statute-of-repose rules; write every bridge report as if a board investigator will read it.

References

1. Tenn. Code Ann. Title 62, Chapter 2.
2. Tenn. Comp. R. & Regs. Chapter 0120, incl. Rule 0120-02-.08 Seals.
3. Tennessee Dept. of Commerce & Insurance, Seal & Signature FAQs.
4. T.C.A. §9-8-301 et seq.; §29-20-101 et seq.; §28-3-202.
5. 23 CFR Part 650 Subpart C, National Bridge Inspection Standards (eCFR, current).
6. NCEES Model Law and Model Rules (ncees.org), for comparison.
7. 23 U.S.C. 112 and 23 CFR Part 172 (qualifications-based selection).

Study text only; the final quiz is taken online. Verify all references against the edition your agency has adopted.