

## Scope Creep

By Stan R. Caldwell, P.E., SECB

Structural engineers frequently provide special or extra services without receiving appropriate additional compensation. Does this phenomenon seem familiar? It can be due to scope creep, which is a malady that afflicts nearly all practitioners. If profits do not meet expectations, scope creep is usually part of the problem.

The project team may foresee *special services* at the beginning of a project, but because they are not related to the primary structural system, they are not included in a structural engineer's basic scope of work. Special services often include the review, analysis, or design of nonstructural elements and their attachment. For example, on building projects:

- Skylight framing, window and curtain walls, cladding, and doors
- Window washing systems
- Non-load-bearing interior partitions and ceilings
- Anchorages, pads, brackets, and platforms for MEP equipment
- Guide systems for elevators, escalators, and conveyors
- Handrails and guardrails
- Stage equipment, catwalks, and acoustical fixtures
- Sculptures, screens, and decorative work
- Retaining walls not attached to buildings
- Fountains, culverts, tunnels, and other site work

Special services also include certain tasks that are traditionally excluded from a structural engineer's basic scope of work. For example, special services may comprise the following on building projects:

- Investigation or field verification of existing conditions
- Coordination of special wind studies and wind tunnel tests
- Coordination of special seismic studies and shake table tests
- Preparation of additional documents for phased construction
- Preparation of additional documents for fast-track construction
- Preparation of estimated material quantities

- Preparation of estimated construction costs
- Preparation of shop drawings and erection drawings
- Design for special energy and sustainability requirements
- Design for special fire resistance requirements
- Design or review of excavation retention or trench bracing
- Design or review of construction shoring
- Design of future expansion and tenant improvements
- Preparation of certifications and permit applications

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*Extra services* are services that arise due to unforeseen circumstances during the design or construction of a project. For example, extra services on building projects may include:

- Evolving revisions to the size or scope of a project
- Changes proposed by the owner, architect, or consultants
- Changes or substitutions proposed by the contractor
- Changes due to undiscovered or unanticipated conditions
- Changes due to newly adopted codes or other regulations
- Changes due to a value engineering exercise
- Changes due to a construction cost overrun
- Revisions that are inconsistent with prior instructions
- Services necessitated by deficiencies in the contractor's work
- Services necessitated by delays in the contractor's work
- Additional representation required at the construction site
- Services as an expert witness in a project-related dispute

These examples of special and extra services are narrowly focused on building projects, but similar lists could be developed for other types of projects such as bridges, other civil structures, and industrial facilities. On many projects, scope creep erodes the profits that structural engineers were planning to achieve. On some projects, scope creep leads to serious financial losses. Why does scope creep occur? There are two primary reasons.

First, structural engineers' scopes of work are not always clearly defined in written professional services agreements for all projects. Many engineers continue to accept assignments based on verbal agreements, or they work under the terms of their proposals that were never formally accepted in writing. Other engineers routinely accept agreements that were drafted entirely by their clients, often without their review or input. When the scope of work is not clearly defined before work commences, an engineer is in a poor position to request additional compensation later.

Second, many structural engineers are reluctant to request additional compensation when they are asked to provide special or extra services. They fear that such requests might adversely affect their relationships with their clients and impair their opportunities for future projects. Sadly, these fears are not entirely unfounded. However, additional compensation is almost never offered except in direct response to a clearly stated request from an engineer.

The key to controlling scope creep is discipline. Structural engineers must have the discipline to secure a signed professional services agreement that clearly defines their scope of work and compensation before starting every new project. Then, they must have the discipline to secure an agreement for appropriate additional compensation before providing any special or extra services. Discipline can be difficult to maintain on every project, but it is essential to profitability. ■



Stan R. Caldwell ([StanCaldwellPE.com](http://StanCaldwellPE.com)) is a consulting structural engineer in Plano, Texas. ([StanCaldwellPE@gmail.com](mailto:StanCaldwellPE@gmail.com))

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