Engineering Costs: Are You Covered?

Don't Seal A Bid Without Them!

When it comes to the bidding process for segmental retaining walls, here's the $64,000 question: Who pays when an engineer's expertise is required on the job? According to Dale Buker, account manager with Anchor Wall Systems, engineering costs are ultimately the owner's responsibility.

But confusion can occur because each municipality has its own requirements for engineering. In most cases, an engineer's expertise is required for installations of segmental retaining walls over four feet tall. If an engineer is required, the installer is usually responsible for finding that person.

To avoid misunderstanding, the installer's bid should clearly state whether or not engineering costs are included. On all projects, installers should make sure their bid is fairly accurate on the quantities of block and also the types and lengths of reinforcement (geogrid) required for the job. Until the engineer provides the final drawings, the greatest possible variance will occur in the amount of reinforcement required for the job. The installer's bid should clearly indicate that the amount estimated is "subject to potentially significant change based on final drawings."

To clarify the engineering question, two industry experts offer their insights regarding how to cover wall design engineering services within a bid.

An Installer's Perspective

Andy Berglin knows the segmental retaining wall industry from the inside out — literally. Berglin began his career working for a block distributor, then obtained a position with a block manufacturer. He joined Slaton Brothers, Inc., a segmental retaining wall installer based in Denver, Colorado, to add project management to his repertoire. Currently, Berglin spends 90% of his time estimating and managing segmental retaining wall projects and the remainder of the workday on site.

When asked to comment on engineering costs, Berglin explains, "We include engineering costs in almost every bid. It's extremely rare when we don't. The assumption is that the installer will do everything that's not excluded on the bid." His advice? Do a line item for each item that will be performed, such as 'provide and install a block.'

Another suggestion from Berglin is to contact the municipality to determine the regulations regarding segmental retaining wall construction. It's important to be fully aware of what the project owner will be required to sign off on the permit. In many cases, the only requirement is geotechnical testing such as compaction and moisture tests and sieve analysis, which the owner typically pays for.

Berglin is quick to point out that a good engineer provides plenty of assistance, inspecting the base before installation begins and then, several times during construction, verifying the proper grid placement and layout. According to Berglin, "For local inspection, engineers charge about $150 a trip. Which means even a relatively small job can easily run $500 to $1000 in inspection fees."

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Andy Berglin, Slaton Brothers, Inc.

To obtain the recommendation of an experienced engineer, ask the block manufacturer. They'll be happy to provide references to engineers who are familiar with their product. Says Berglin, "If you're going to build walls you need to build good relationships within the industry, or you're not going to get good service. A good relationship means you'll get good service and good pricing – and generally avoid having to wait for a site inspection."

An Engineer's Perspective

Joe Kowalski of Kowalski Engineering, Inc. is an engineer who specializes in walls and slopes. Based in Cincinnati, he provides services in Ohio, Kentucky and Indiana. In his expert opinion, it's imperative that any wall over 4 1/2 feet be engineered.

Within different market areas, there are engineers who specialize exclusively in wall design. Says Kowalski, "While the going rate may vary across regions, most engineers charge about 50 cents a square foot, but have a minimum fee of $750 to $1,000. These fees assume the installer has provided a grading plan and a soils report from a geotechnical engineer."

"We're not landscape architects," Kowalski points out. "We just specify the structural engineering within the wall, identifying the required reinforced soil, geogrid and block and their configuration." Since some products are not compatible, this information is crucial.

Adds Kowalski, "In general, beware of the words: 'SRW designed by others.' The contractor should push the owner to provide a set of engineered drawings. Then everyone bids the same set of drawings and no one gets burned. One way to cover yourself within a bid is to make a clear statement such as 'This bid is subject to change based on final engineered drawings.' "

Kowalski also advises that installers determine if the engineer's fee includes site inspections, as necessary, which are typically done on an hourly basis above and beyond the design fee. Kowalski offers this service to installers to ensure that the wall he has designed goes up correctly. It's important to understand that the engineer's design does not certify the installer's work. The only thing the engineer warrants or certifies is that his or her plans were developed in accordance with the state of practice of engineers in a given area at a given time, such that if the wall is built according to those practices, it should perform as intended.

"I have a great relationship with several builders in the area," Kowalski said. "The number one factor is TRUST. An engineer wants to be associated with good builders to relieve any worries of poor performance of a wall. Contractors have to make sure they're putting enough money in their bids to make sure their walls are built right. Whatever you do, don't try to cut corners. You're likely to end up with a wall that doesn't perform."