



metal meets mush

Never underestimate the importance of soil testing

by Bruce Giffin

The yellow Caterpillar D-6 bulldozer was half buried in the ground, nose first, tail end pointing high to the sky like an embedded rocket piercing the Earth. The scene reminded me of Cadillac Ranch, the piece of art, near Amarillo along Interstate 40, of the ten Cadillacs buried at a 45 degree angle. Still in his seat, the operator looked over at me with a look of surprise and disbelief. Right before our eyes, the solid ground we were on had turned to Jell-O and half swallowed up his tractor.

It was 1987, early on in our careers as general contractors. It was the beginning of a remodeling project on a home that we were to add 800 square feet to. An old shed of a garage was in the backyard and the plans called for removing it. The first thing the Cat operator had to do on the job was crunch it, which took all of about five seconds to do as it was standing in place mostly out of habit. The roaring sounds of heavy machinery at high throttle mixed with the squeal of rusted bending nails and old boards collapsing into a heap. Back and forth, on and off the top of the debris, twisting and turning, he scrunched it up. On the fourth run off the top of the pile, five minutes after he started, the ground suddenly liquefied and the bulldozer dove head first into the gooey mess.

What a surprise, as all around us outcroppings of sandstone boulders stood and our concern had been about running into rocks, not liquefaction. There had been no soils report prepared for the project. It wasn't really required, and, as the existing home didn't exhibit any signs of stress from the earth, it wasn't assumed that we needed it. The bulldozer was so buried that it took another tractor to get it out. The vibrations and movement of the equipment had been just the right frequency to turn solid ground into mush. Ahh, the joys of building.

In an instant, we found out that what was supposed to be a simple new addition with a basic foundation was going to require a great deal more thought and engineering before proceeding further. There was an underground stream bed running through the property and even though it was a dry year, there was enough water flowing below the surface that we had to expose it and divert it around the site. Investigation showed that there was five feet of alluvial dirt and cobbles that had washed down over the eons on top of a thick layer of hard pan clay. The ground water was making its way from the top of the mountains to the ocean along the seam between the two layers.

After consultation with soils engineers, the recommendations were to dig out the muck

until we hit that layer of hard pan, import dry dirt and compact it back into place. Additionally the foundation for the addition would have to have footing extensions. The change orders that we got from the excavator were so shocking that we decided to get other bids.

Three weeks later, with a new excavating contractor, we began again. Although his price was a third less, to say that this new excavating contractor was a likeable character would be an overstatement. The first clue surfaced when, as he attempted to maneuver his extremely large excavator down the lane, the neighbors came out to question what was going on. He was such an unpleasant guy, that in less than five minutes one of the neighbors had pulled her Dodge Econoline van nose to nose with his gigantic excavator to block the lane. That's when we got the call. It was getting more and more heated, and as my business partner Geoff [Crane] and I showed up, not only were the police arriving but the Sheriff's deputies as well. In the midst of this, the excavating contractor jumped into the driver's seat of the van and attempted to start it. The van owner flew into a rage and was grabbing him around the neck, pummeling and throttling him and trying to pull him out. And that's when the cops moved in.

After the dust settled, the neighbors agreed to allow a smaller excavator down the lane and the project moved forward and was built as per recommendations. Years later, it quietly stands there, its brief moment of turmoil unknown except to those who experienced it. Meanwhile, as builders, the lessons we learned were to always advise our clients to get soils reports, even on seemingly inconsequential projects, build good relations with the neighbors and keep them informed, and that the cheaper priced trade contractor is not always the right choice. Oh yes, one more thing...on emotionally trying days, send the clients flowers and a good bottle of wine.

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