Fall Protection Around a Drilled Shaft Installation

Historically, the US construction industry in the, employs about 6% of the workforce. Unfortunately, the industry we all love – generates approximately 20% of all the recorded fatalities that occur in each year.

Out of 4,386 worker fatalities in private industry in calendar year 2014, 899 or 20.5% were in construction. 359 out of the 899 total deaths in construction (39.9%) were from a fall of some kind. Falls from a height are consistently the #1 cause of death in the construction industry.

During the installation of a drilled shaft, there are typically three scenarios where an employee can suffer from a fall. They are:

1. Those experienced during assembly and disassembly, maintaining, and repairing equipment
2. Those experienced while working around a shaft under construction
3. Those remaining after the shaft has been excavated, but not being worked

Fall exposures experienced during assembly and disassembly, maintaining, and repairing equipment will require the use of fall protection systems in the form of guardrails on the machine (passive form) or personal fall arrest (active form) systems. Access to a machine may be better handled by using a ladder or AWP (Aerial Work Platform), however planning and training must be performed when using these procedures.

Fall exposures experienced (i.e. whenever the shaft reaches six foot in depth) while working around a shaft under construction are required to be protected using personal fall protection devices or guard rail system. You could insert a section of casing (extending 42 inches above the ground surface) to act as a guardrail. If using portable guardrail, it must resist at least 200 pounds of force applied within 2 inches of the top edge, in any direction – so be sure to anchor the guardrail to the ground, so it cannot be pushed over. Tie off points must be capable of supporting 5,000 lbs. or two times the intended load – per employee using the tie off point. Retractable lanyards are the most common in use today. Remember to always inspect personal fall protection before each use. Don't be fooled by thinking you only need fall protection when drilling a shaft when the shaft diameter is greater than 30 inches. **All** drilled shafts require some form of fall protection around them when they reach six foot or greater in depth. Your company may have different requirements that exceed these minimum forms of protection, so be sure you understand and follow those requirements. It could save your life!

Fall exposures remaining after the shaft has been excavated, but is not being worked, will require the use of a guardrail on all sides or be completely covered over. In this condition, the edges of the shaft are "unprotected" and the use of a conventional fall protection system, such

as guardrails, or a cover must be used. The cover (if used) must be secured form movement and labeled “Hole” or “Cover” or other suitable warning.

Compliance with these fall protection measures are not only for the drilled shaft contractor employees. Other contractor employees, Owner representatives, and even site safety people working around a drilled shaft excavation must be fall protected.

Along with the fall protections measures discussed, you must have a written rescue plan in place in the event someone falls into an open shaft.

Simply calling 911, or the local emergency rescue number is not a plan. If you are going to rely on an outside emergency rescue team to conduct a rescue, you must first notify the team of your potential emergency. Request a visit to your site and have a member(s) of the rescue team see what they need to be prepared for. Without this preparation, you may get a response from an emergency crew who is inadequately equipped or trained to conduct a confined space rescue.

You should always have basic rescue equipment on your site. This equipment should be kept in a container, clearly marked as such. This is in the event you must perform a rescue without outside assistance. Employees must be trained on basic rescue techniques on an annual basis.

What is the “best” method of fall protection when working near a drilled shaft?

Any accepted method that is in place, and is USED!

Remember – it’s not how fast you can drill. It’s how fast you can drill safely.