SETTING AND DRIVING TIPS FOR PS FLAT SHEETS:

Although setting and driving techniques vary with the individual contractor and site conditions, several basic principles can generally be applied. It should be realized that the lack of good setting and driving practices can result in job delays and an unsatisfactory structure. The following suggestions are offered to help avoid problems at the site:

Handling of PS sections: These sections have very little modulus (beam strength) and are, therefore, very susceptible to handling damage. It is important that great care be taken when transporting or lifting these sections. When sheets exceed 70 feet (21 meters) in length, they should be lifted at two or more points.

Have an adequate steel template: Longer sheeting lengths will require a two or three tier template with tiers spaced 15 feet (4.5 meters) or more apart. For example, a contractor should consider at least a two tier template when installing 70 foot (21 meters) or longer sheets as this will facilitate setting and driving and result in a superior end product. As with Z-Piling, it is important that each sheet be plumbed and secured when set.

The diameter of the template is predicated on the contractor's experience and method of setting circular cells. It is important that the template diameter be less than the theoretical inside clear cell diameter in order to easily close the cell. Wood blocking may be utilized to adjust the template to ensure the proper setting width. Upon filling, the finished cell will expand to meet or exceed published values. When a cell with long lengths is being constructed, it may be advisable to stiffen the starter sheet by reinforcing it full length with a structural shape. Site conditions such as swift water or hard driving may require more sheets to be reinforced.

Splicing: When it is necessary to splice PS sections, the splice point on adjacent sheets should be staggered by several feet.

Mark the driving template for each pile or pair of piles: This allows for wall adjustments to be made during the setting phase, insuring that the sheets are located properly for cell closure.

Ensure that the sheets are properly interlocked when set: Improper interlocks become the "weak links" and result in job delays and/or failures. A closed cell must have an even number of sections (including connectors) to avoid an improper interlock. Set all sheets in the cell before driving any of the sheets, other than nominal pinning of the starter sheet(s).

"Shake out" several sheets at any closure point: Following good practice as noted above should ideally result in the last sheet sliding smoothly down into the remaining gap. Although the first sheet is set plumb and the next to last sheet is plumb, the chances that the remaining gap is uniform (19.69 inches or 500 mm) the full length is improbable. Picking up and dropping, or "shaking out," several sheets near the closure point until the sheets run smoothly will minimize the chance of driving sheets out of interlock.

Drive piles in pairs: Once sheet piles are threaded and set, it is more economical to drive two at a time. Some experts suggest that the energy needed to drive a pair may be only 50% more than that required to drive a single pile.

Drive piles in stages and work around the entire cell by alternating sheets (pairs): This allows the piles to be guided by those previously driven, and lessens the chance of driving sheets out of interlock. The distance a pile, or pair of piles, should be driven at any one time will be governed by the driving conditions. In the first pass around the cell, every other pair is driven perhaps 4 feet (1.2 meters). In the second pass around the cell, the un-driven pairs are driven 8 feet (2.4 meters), 4 feet (1.2 meters) restrained by the adjacent pairs and then 4 feet (1.2 meters) into virgin soil. This procedure is continued until the cell is driven to design tip elevation. Good practice, in order to keep the cell plumb, is to reverse the direction of driving for each pass around the cell.