

HIGH POTENTIAL NEAR MISS FALLING OBJECT

SR-75 CONCRETE SWIVEL STEADY BAR RETAINING BOLTS

EXECUTIVE SUMMARY

Date: 27th January 2021

Location: Secant Piling to Perimeter

Piling rig: Soilmec SR75 in CFA ECT2 mode (manufactured Nov 2020)

Rig Fitted with 8mtr Kelly Pole Extension and Safety Locking Indicator light system (Green when locked/Yellow when Un locked)

The piling rig was installing 750mm secant wall piles to approximately 21m whilst working in close proximity to the site boundary. An exclusion zone was in place outside of the site and managed by the Principal Contractor.



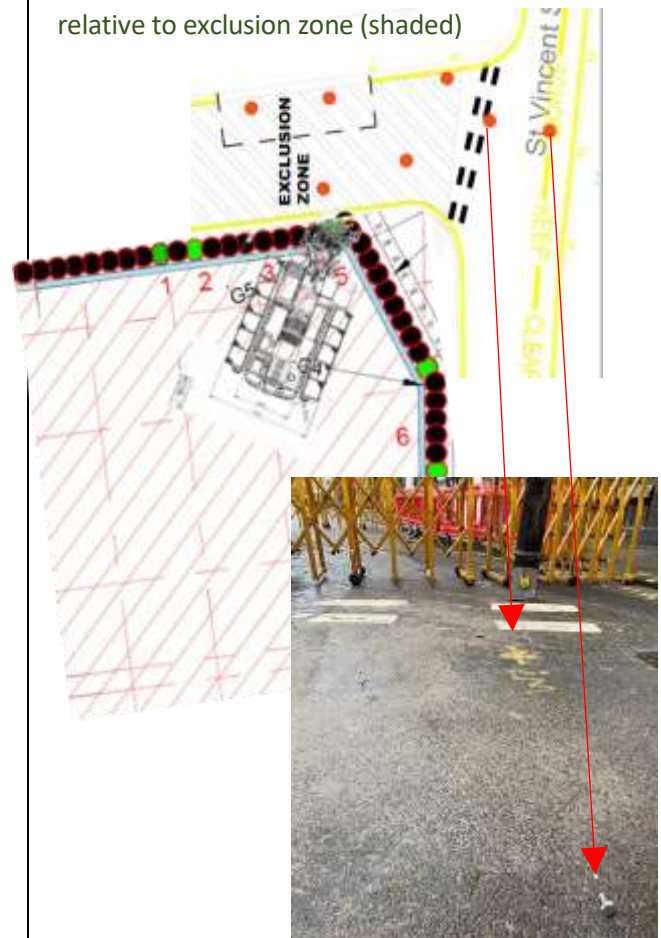
EVENT:

The augers were being reverse rotated out of the bore from the pile toe.

The Kelly Pole Extension was disengaged and thought to be placed in its locked position. The Rig Operator then continued to reverse rotate the augers out of the bore. The rig operator stopped reverse rotating the augers when the rotary table reached 1.5mtrs from the top of the mast. Immediately after doing so, the auger and Kelly Pole then slipped down into the borehole. Resulting in the underside of the Kelly Pole impacting onto the rotary table. Causing 7 retaining bolts, holding the steady pole bottom bracket to the rotary table, to shear off. The bolts all fell within the exclusion zone. The bolts proceeded to roll outside of the exclusion zone onto the adjacent footpath at low speed.

Indicative plan of bolts (red dots)

relative to exclusion zone (shaded)



INVESTIGATION

Initial investigations and trials indicate that the Kelly Bar was not locked correctly as per (Fig 2.) and was incorrectly locked as per (Fig 1.)

Fig 1. (Unlocked)

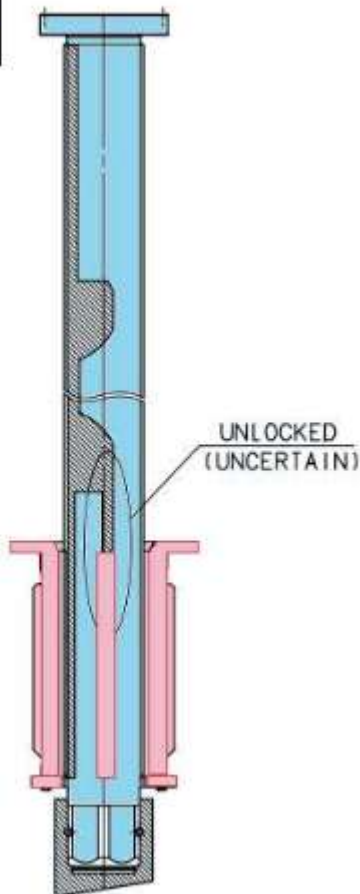


Fig 2. (Locked)

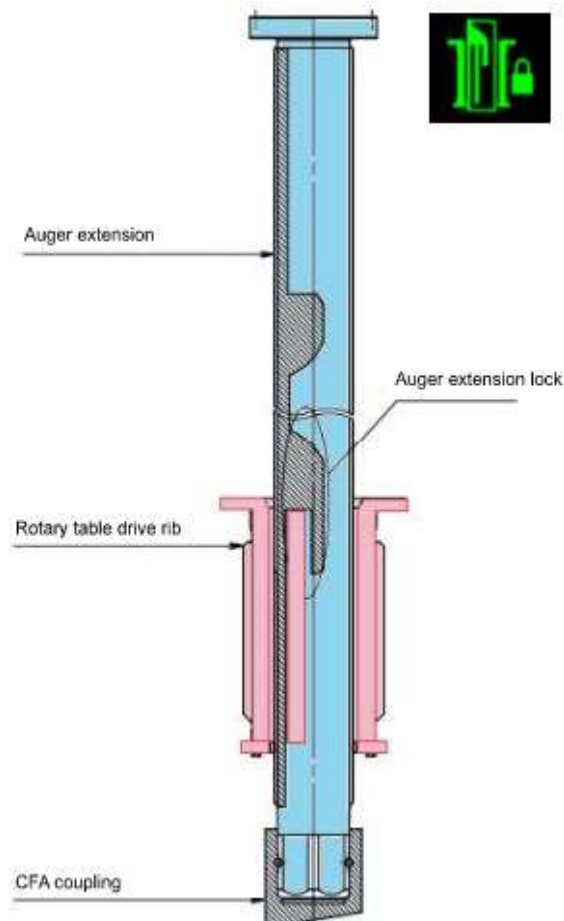


Fig 3.



RECOMMENDATIONS FROM INVESTIGATION

1. Review GSS Procedures (Procedural changes implemented)
2. Implement an internal Training Event for Both Rig Operators and Rig Attendants.
3. Review exclusion zones and management procedures.
4. Provide constraint to bolts to prevent falling as per (Fig 3.) above.
5. Share findings with manufacturer to reduce risks on subsequent models.
(External Locking Indicator lights being fitted on top of the cab plus explore the feasibility of an audible alarm indicating the Kelly Pole is in the Un-locked Position)
6. Share findings with other piling contractors through the Federation of Piling Specialists.