CLAIMS

1. An apparatus (100) for tracing pile set during pile driving of a pile (150) comprising:
a panel (110) for attaching to the pile (150);
a rotatable holding mechanism (120) with remotely controllable function for holding a writing instrument (160) against the panel (110) to trace the pile set for at least a series of blows during the pile driving;
a sliding mechanism (130) with remotely controllable function, which slides on a pair of bearing strips (131', 131'') to provide lateral movement of the holding mechanism (120) across the panel (110) after each blow of the pile driving; and
a platform (140) with groves for holding the bearing strips (131', 131'') in place for allowing the sliding mechanism (130) to slide freely in multiple directions;
wherein the holding mechanism (120) further comprises a resilient means (129') connecting ~~the~~ a rotatable lever arm (126) to the holding mechanism (120) to reduce excess vibration so that the writing instrument (160) is held in position while allowing the lever arm (126) to be rotated by ~~the~~ a motor controlled arm (127) during the tracing of pile set.

2. The apparatus (100) according to claim 1, wherein the holding mechanism (120) has the rotatable lever arm (126) connected thereto that is linked to the motor controlled arm (127) by a rod (128) that is placed within a spring (129) for actuating the rotation of the holding mechanism (120) and the rod (128) acts as a stopper for keeping the spring (129) in tension condition.

3. The apparatus (100) according to claim 2, wherein the holding mechanism (120) further comprises a top cylindrical block (122) where the writing instrument (160) is held, a bottom cylindrical block (125), a shaft (123) for connecting the top cylindrical block (122) and the bottom cylindrical block (125), and an extended

bottom cylindrical block (125') connected beneath the bottom cylindrical block (125), wherein the cylindrical block (125') is not rigidly attached to the shaft (123) so that which can be rotated by the rotatable lever arm (126) while the shaft is stationary.

4. The apparatus (100) as claimed in claims 1 to 3, wherein the apparatus (100) is mounted on a base structure (190) with at least three supporting means extending from the ground, wherein the three supporting means being adjustable to allow adjustment of apparatus height in conjunction with the pile (150).

5. The apparatus (100) according to claim 3, wherein rotatable lever arm (126) is secured to the extended bottom cylindrical block (125') by the resilient means (129').

6. The apparatus (100) as claimed in any of the preceding claims, further includes an optical sensor (170) attached to the platform (140) for monitoring the movement of the sliding mechanism (130) and the writing instrument (160).

7. The apparatus (100) as claimed in any of the preceding claims, further includes an interdigitating member (201', 201") to hinge a display panel (200) on a controller for controlling the movement of the sliding mechanism (130) and the holding mechanism (120), wherein the interdigitating member (201', 201") allows the viewing angle of the display panel (200) to be adjusted and locked at any viewing angle.

8. The apparatus (100) as claimed in claim 1, wherein the sliding mechanism (130) further includes a belt (133) for actuating transverse movement of the sliding mechanism (130).