



69 Cromwell Avenue, Underpinning Methodology

- Underpins will be installed in sequence as set out in MHA structural drawings and methodology see FIG 1 below.
- Part of the existing ground floor timber floor will be removed locally the rest retained to aid in building stability
- We propose to reduce the length of the toes to North and south elevations leaving a larger retained soil area for back propping pins once installed. See Fig 2 also showing proposed propping locations.
- Temp Works for building stability in design
- The existing ground floor timber joisted floor will be retained and locally removed for access this is to aid with the stability of the building along with the temporary scheme design underway.
- During the underpin process monitoring will be undertaken every 2 weeks and report submitted to project team, target positions to be agreed by structural engineer. (Fig 4 example of report) and base readings to be undertaken before commencement of any demo/groundworks.
- DE predicts the underpinning/Structural works would fall within the Burland scale 1 (BRE Digest 215 assessment of damage in low rise buildings) minor movement causing cosmetic damage, fine cracks made good with re-decoration.

Underpinning Procedure

1. Reduce the remaining ground floor level to existing foundation level
2. Initially identify the pins numbered 1 on the sequencing plan and prepare for excavation
3. Excavate down to toe formation level installing temp shoring down to formation level
4. Blind the formation level with 50mm concrete blinding
5. Install the reinforcement and cast the base/toe
6. Allow 24hrs to elapse before formwork installed, cast wall to within 75mm of the underside of the existing foundation.
7. Allow 24 hrs to elapse then install dry pack rammed tight, remove formwork and install temp prop from pin to retained soil as shown in fig 2
8. Allow 24 hrs to elapse before commencing excavations of underpins sequence 2 once all sequence 1 pins complete.
9. Repeat items 5-8 to complete sequence 2 pins
10. Continue in this manner for the follow-on sequence numbers

Drainage Install/ reduced level dig

- Where drainage runs under toe these will be installed before install of toe
- Reduce level dig to remainder of soil down to formation level will be in 3mtr long sections (see fig 3) a sacrificial prop will be installed between the north and south toes for stability,
- Underground drainage will be installed if required in the 3-meter section, once complete a 50mm blinding will be laid then reinforcement and concrete. This will be repeated 4 more times.

Fig 1 Underpin
Sequence

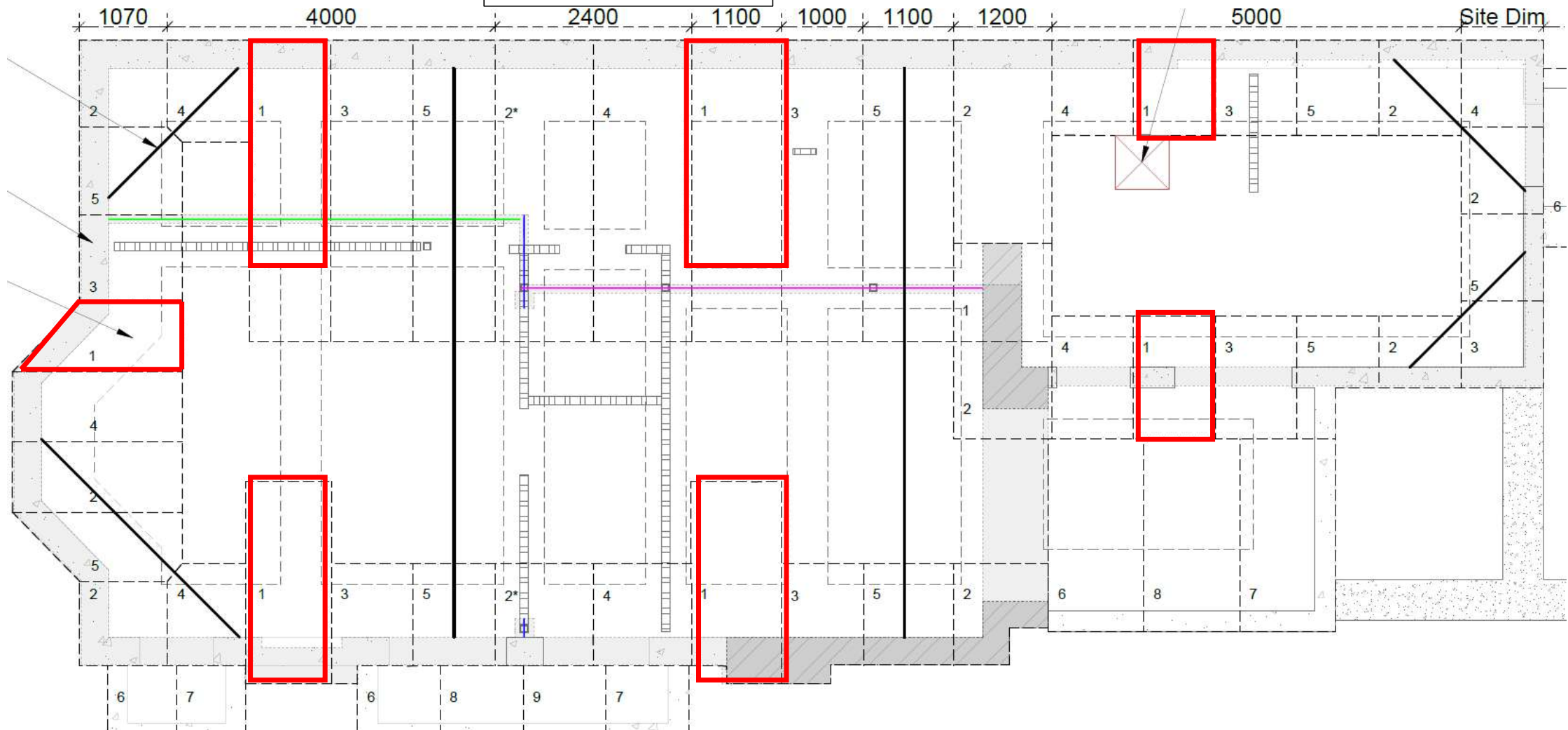


Fig 2 Propping pins

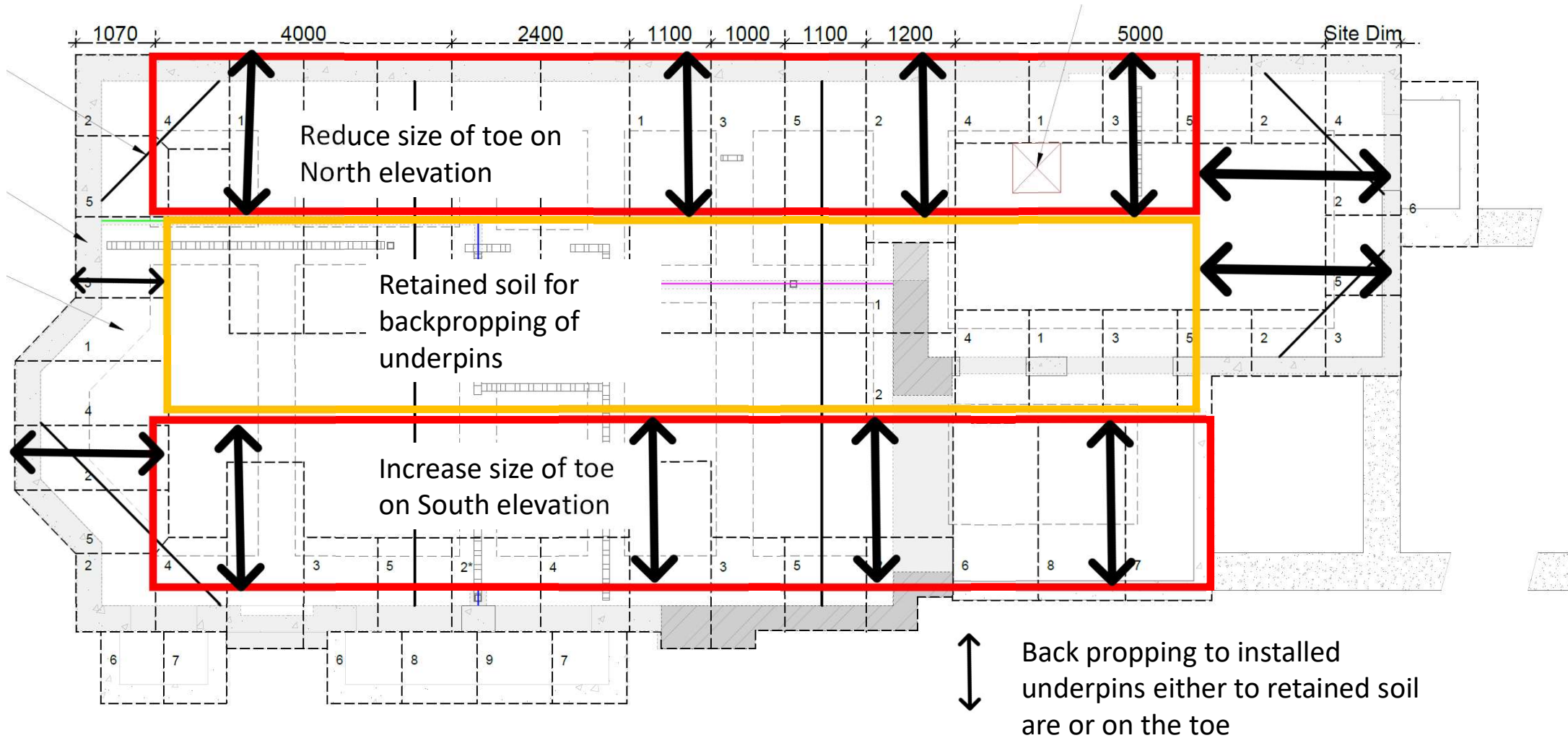


Fig 3 Reduced dig and slab sequence

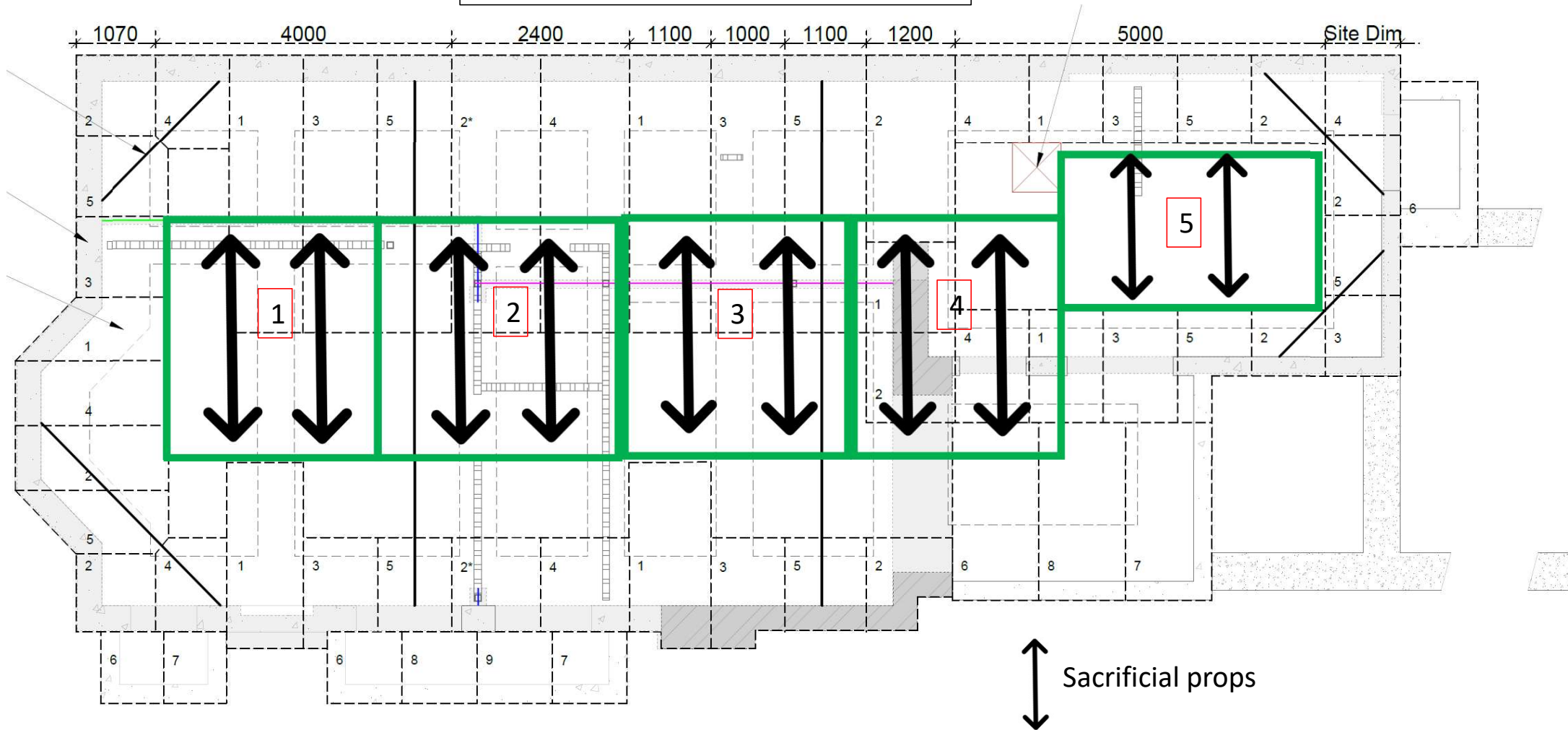


Fig 4 Monitoring Example

Deviation From Base Readings				Deviation From Previous Results			
Target	Easting (X)	Northing (Y)	Elevation (Z)	Target	Easting (X)	Northing (Y)	Elevation (Z)
MP01	0	0	0	MP01	0	0	0
MP02	1	0	0	MP02	1	0	0
MP03	0	0	0	MP03	0	0	0
MP04	0	0	-1	MP04	0	0	-1
MP05	1	0	0	MP05	1	0	0
MP06	0	1	0	MP06	0	1	0
MP07	0	0	0	MP07	0	0	0
MP08	0	0	0	MP08	0	0	0
MP09	0	1	1	MP09	0	1	1
MP10	0	0	0	MP10	0	0	0
MP11	1	0	0	MP11	1	0	0
MP12	0	0	-1	MP12	0	0	-1
MP13	0	0	0	MP13	0	0	0
MP14	0	0	-1	MP14	0	0	-1
MP15	1	0	0	MP15	1	0	0
MP16	0	0	0	MP16	0	0	0
MP17	0	0	0	MP17	0	0	0
MP18	0	0	0	MP18	0	0	0

OBS = TARGET OBSCURED/UNABLE TO SURVEY
DES = TARGET DESTROYED
NEW = NEW TARGET INSTALLED
MOVED = TARGET POSITION HAS MOVED

