Job No: DFS221011 Rev 06 Design Engineer: DA Date: 15 August 2023

Job Name: BROXWOOD VIEW, 29 ST. EDMUND'S TERRACE LONDON NW8 7QH

Doc Title: Method Statement & Risk Assessment for Proposed Underpinning Works

BROXWOOD VIEW, 29. ST. EDMUND'S TERRACE

LONDON NW8 7QH

Method Statement & Risk Assessment for Proposed Underpinning Works

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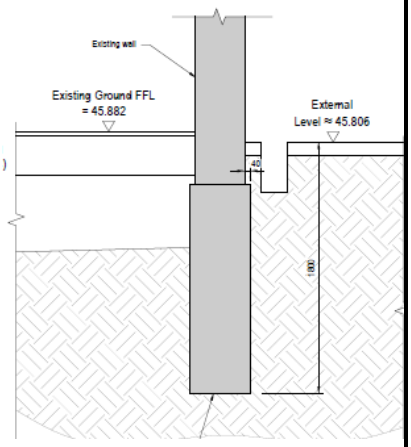
1.0 INTRO DUCTION

The foundation of the neighbouring property on gridline F is required to be underpinned to enable the construction of the basement. The following is the proposed structural review of the underpinning sequence.



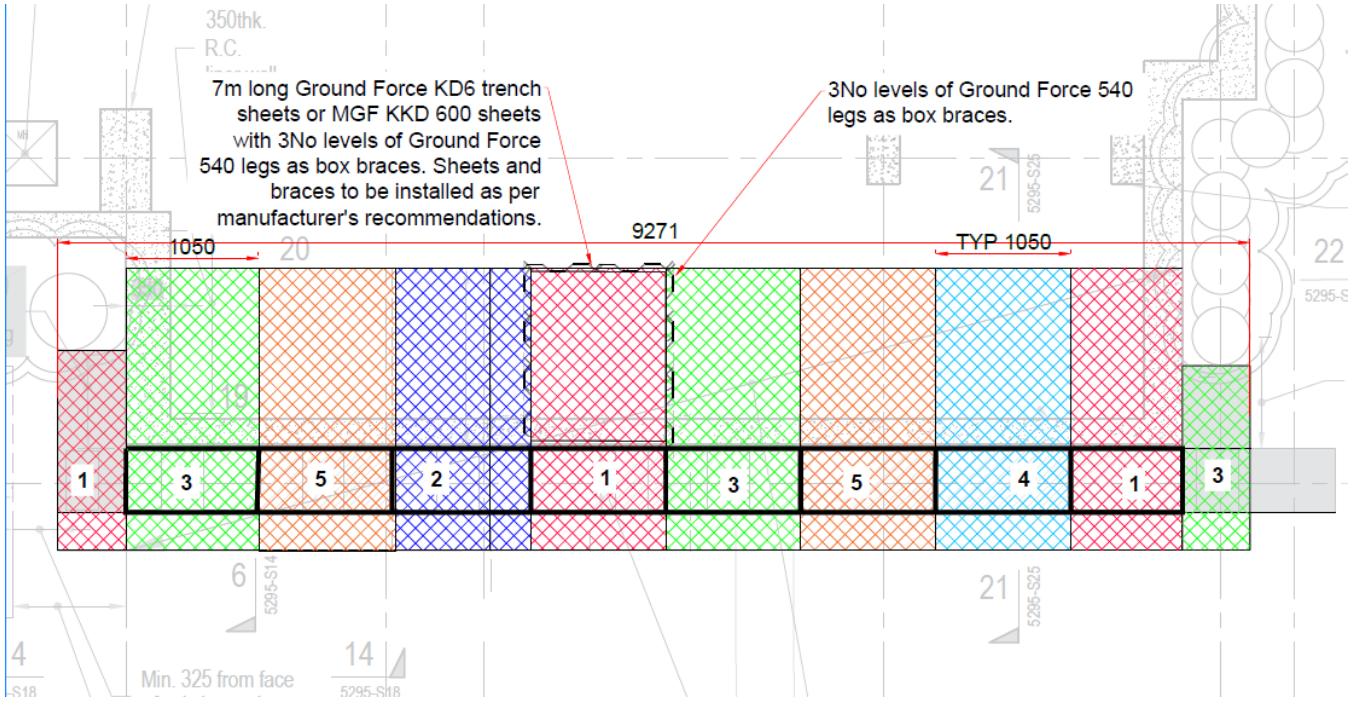


Figure 1 Proposed underpinning plan

Proposed Underpinning Sequence

1. The underpins must be installed sequentially according to the bays shown on Fig 2 below or DFS drawing 221011-13 to 15.
2. Each underpin must not be more than 1m wide.

3. Install trench sheets to support the excavation of work trench to underpin 1 as per DFS drawing 221011-13 and as per Ground force or MDF specifications. The sheets should be installed with a min of 20T digger.
4. Excavate work trench and underpin 1 until the formation level is reached. The excavation will be carried out by both machine and hand. The work trench must be max of 1200mm wide and 2500mm long to suit site requirements. The underpins and the toe themselves are 1050mm wide. The heel should be dug by hand and it is expected to hold because the soil is stiff clay. During and after excavation, the clay experience negative pore pressure which enhances internal suction and prevent fissures.
5. Install the braces/walers for the excavation support as the excavation progressed to the formation level (Fig 3).
6. Also install the 18mm and the Acrow props to support the ply as required (Fig 3).

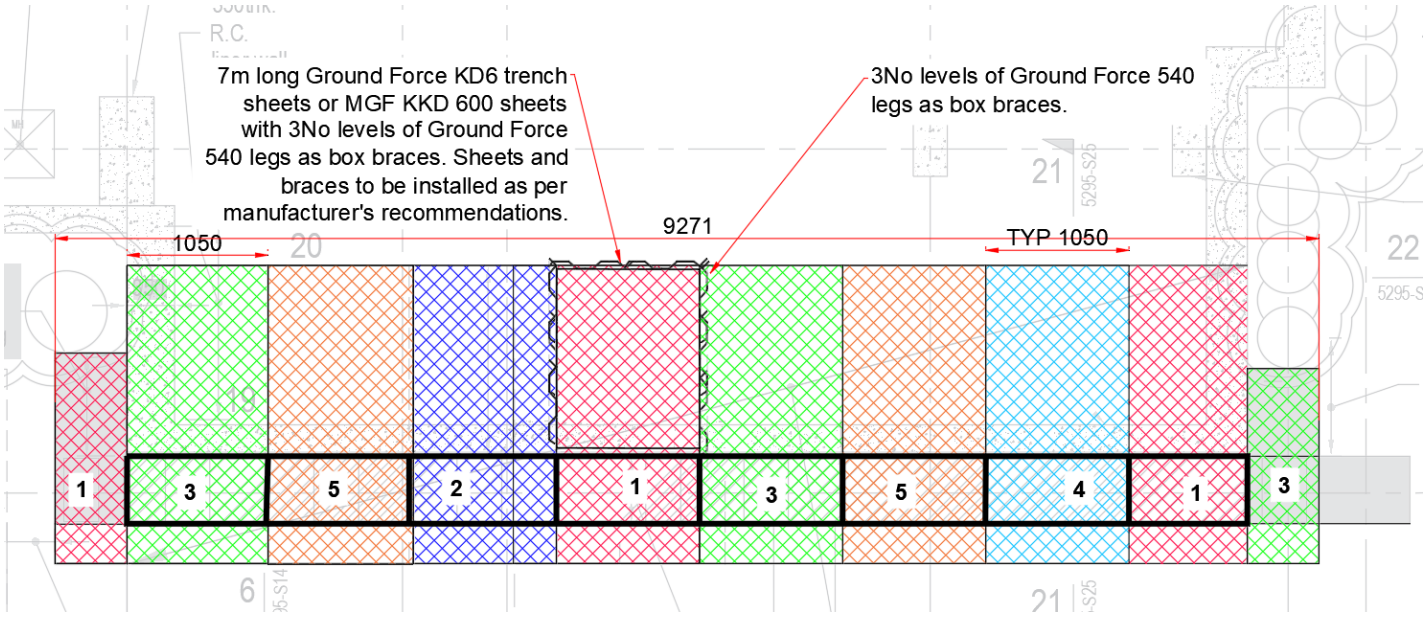


Figure 2 Underpinning sequence plan

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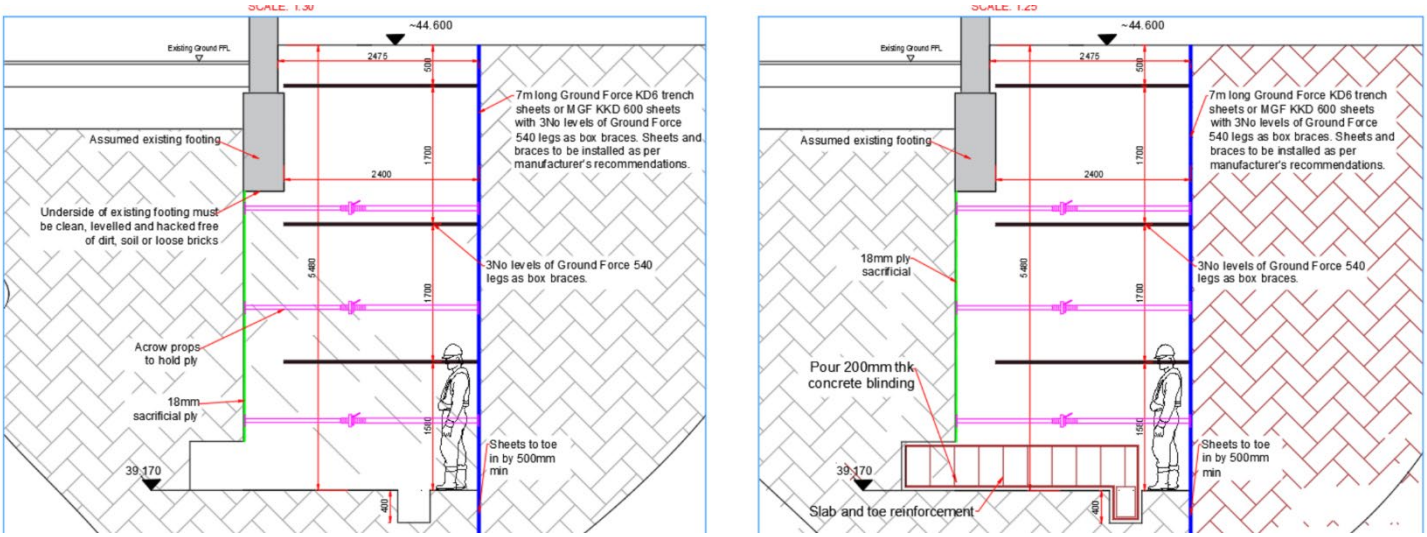

Figure 3 Installation of excavation support (LHS) and formwork for concrete pour (RHS)

7. The exposed underside of the existing footing must be cleaned properly, levelled, and hacked free of dirt, soil or loose bricks.
8. The formation level must be well-compacted with wacker plate until refusal.
9. The rebar of the slab and the toe should be installed as per Richard Tant Drawing 5295-S212.
10. The formwork of the slab and toe can be installed, and the slab poured together with the kicker as per Fig 4.
11. The Acrow props supporting the ply should be removed as the rebar of the stem of the underpin are being installed.
12. Install the formwork for the RW. Formwork can be strut against the earthwork support for stability.
13. Pour the underpin (RW stem) in a single hit. The concrete can be poured by letterbox type of concrete delivery. The concrete is ready mix and core samples must be taken for tests. The results should be sent to RTA for approval.
14. The underpin concrete should be poured till it is 75mm shy of the underside of the existing foundation (Fig 5).
15. The concrete is ready mix and two samples must be taken for every mix for cube testing. The results should be sent to RTA for approval or refusal.

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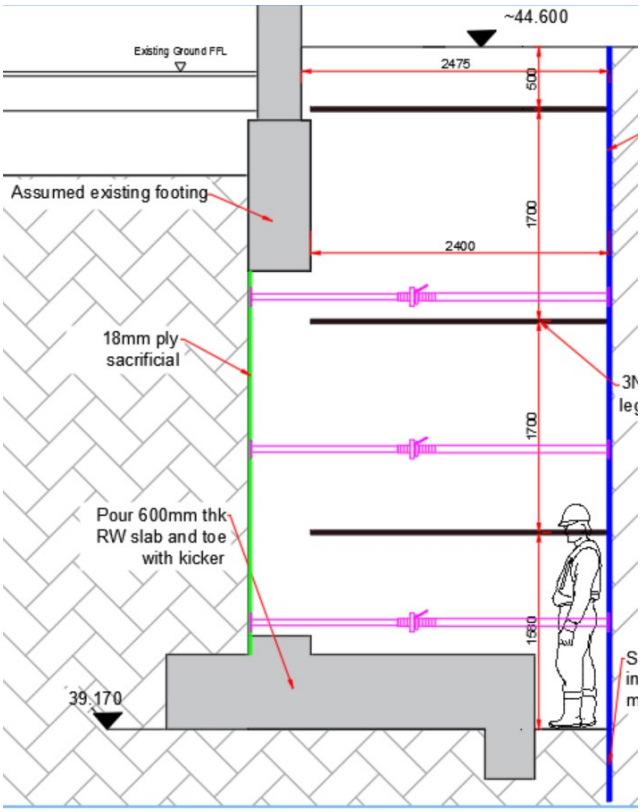

Figure 4 RW slab with kicker poured

trench while compacting the fill in 150mm layers (Fig 5). This ensures that the lateral earth pressures on the underpin and the trench sheets are adequately resisted.

21. Pull out the trench sheets.
22. Proceed to the next underpin and repeat the sequence above from 1 to 16.
23. Once all the underpinning bays are installed and the work trench backfill completed, install the waling beams and the flying shores as per Fig 8 and DF drawing DFS221011-05.

16. After allowing the concrete to cure and shrink for 48hrs min, apply 75mm dry pack cement/sharp sand (1:3) with admixture Fosroc Cebex 100 mixed hand damp & rammed in solid can be applied as specified by Richard Tant Associates drawing (Fig 6).
17. This should be undertaken in the presence of the DFS Temporary Works Engineer for the first time. The subsequent sequences should be monitored and recorded by the Temporary Works Coordinator.
18. After 24hrs min when the dry pack have reached its full required concrete strength, strike the formwork.
19. The underpin is now live and transferring loads to new ground strata.
20. Remove the excavation support walers. Backfill the

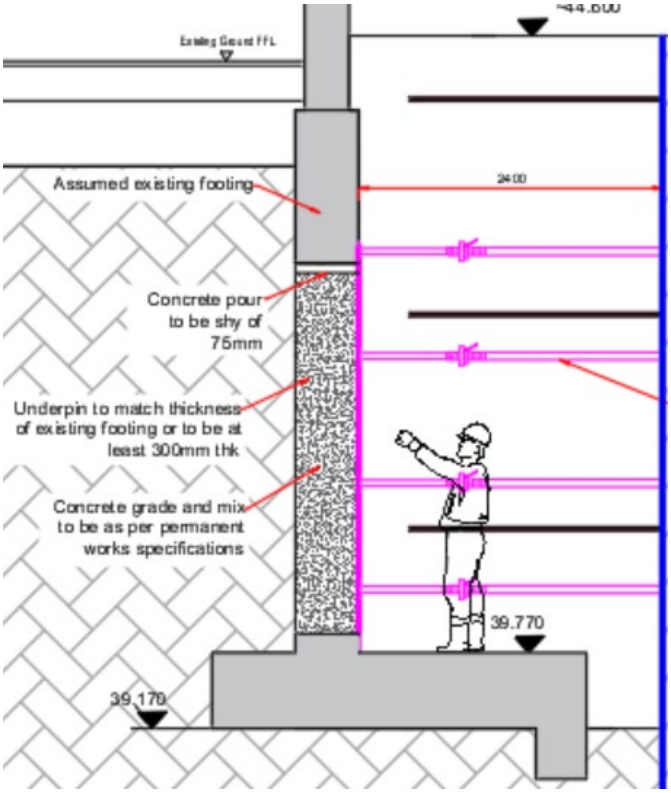

Figure 5 The stem of the RW to be poured 75mm shy of foundation

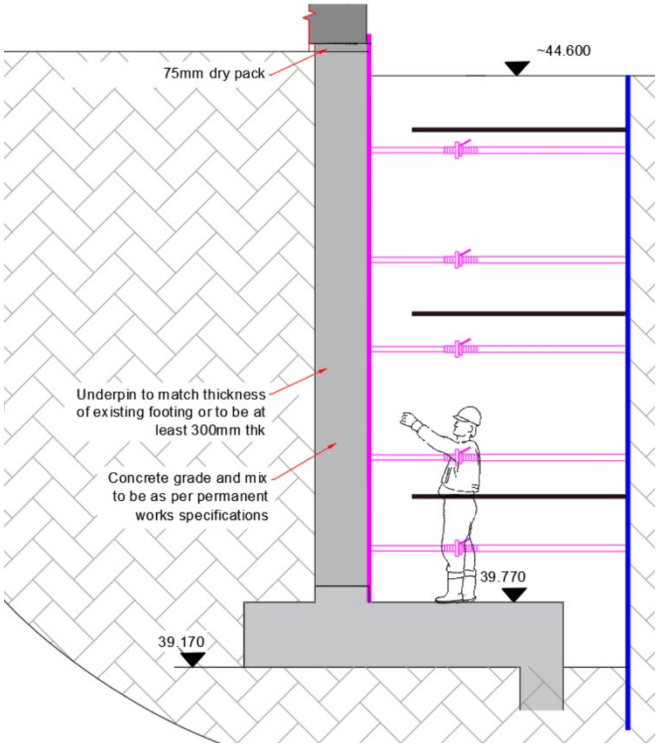

Figure 6 75mm of dry pack the first of which should be undertaken in the presence of the TW Engineer. The subsequent should be supervised by the TW coordinator

24. Commence the general excavation to formation level.

25. Install the 50mm compressible material on the RW and install 50mm concrete blinding next to slab for the raft slab, then install 2 layers of polyethene waterproof on the RC wall.

26. Install the rebar for the 950mm thick raft slab and the liner wall and pour.

27. Once the raft slab our and liner wall pours are completed, set up falsework for ground slab pour.

28. Once ground floor slab is poured and reached the strength specified by the permanent works engineer-typically 3-day strength min, the falsework

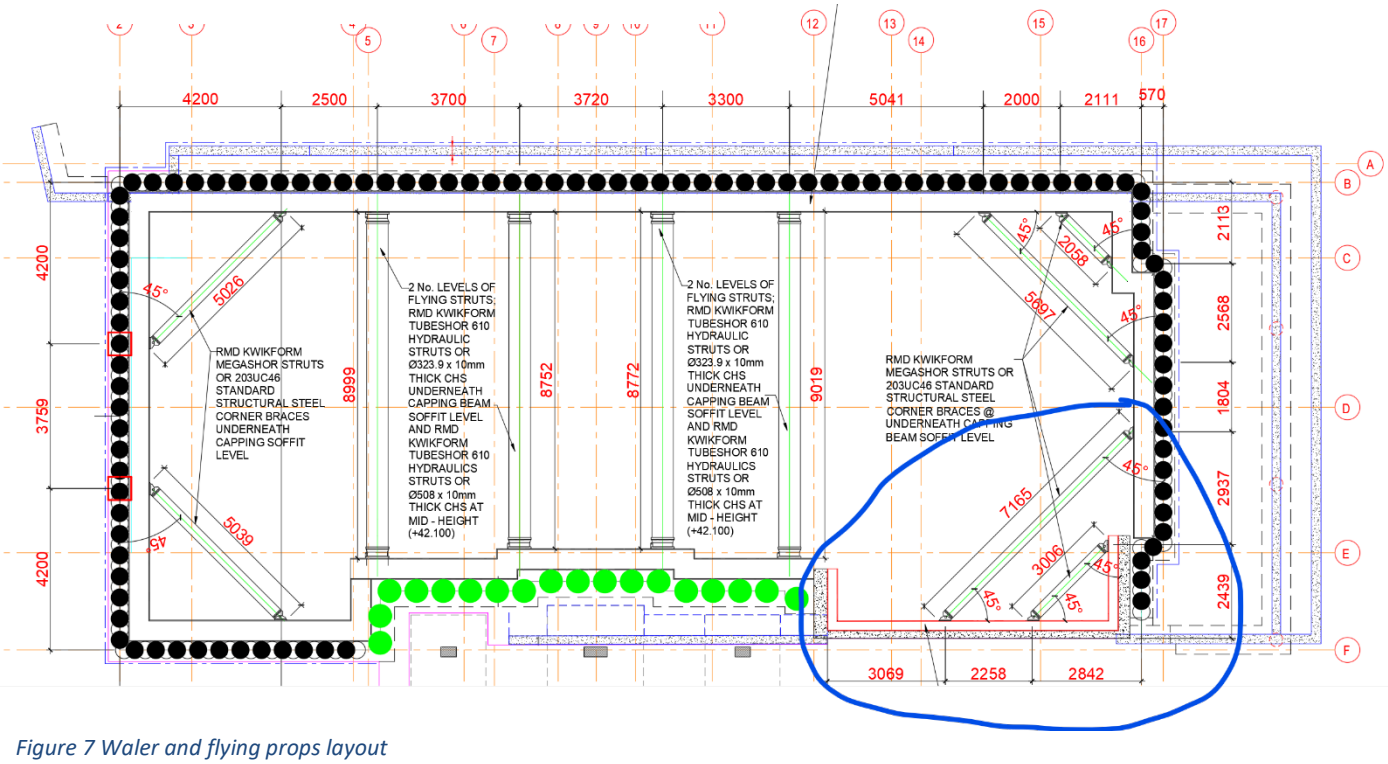

Figure 7 Waler and flying props layout

can be struck and the walers and flying props removed.

Caveats

1. The ground must be scanned thoroughly for buried services.
2. Stability of excavation and plumbness of formwork/underpinning must be ensured at all times.
3. Continuous working trench is not allowed. Working trench must be for each pin and must be backfilled after the construction of each underpin.
4. There is no allowance for overdig. Formation level must be as specified.
5. Ground water is assumed to deeper than formation level. Should water be encountered, it must be continuously pumped out.
6. The shear faces of the constructed underpin must be cleaned of muck and dirt or any loose debris to ensure adequate bonding with the incoming underpin.
7. The Temporary Works Engineer (DFS) will visit site to inspect and approve in writing the Temporary Works installation at the critical stages e.g., loading/unloading stages, piled wall propping, installations of braces, application of dry pack to each pin, and during general excavation for the underpinning works, etc to completion, and must provide a copy of these written approvals & RTA site visit reports in Contractor's site progress reports which are to be issued to the party wall surveyors on request.
8. Following RTA's review of existing wall/footing construction on RTA Drwg 5295-S25D, DFS will revise the MS and or Sequence drawings or undertake additional Temporary Works design if required.
9. All Richard Tant Associates structural drawings listed on Schedule Register & Issue Sheet should be strictly followed.