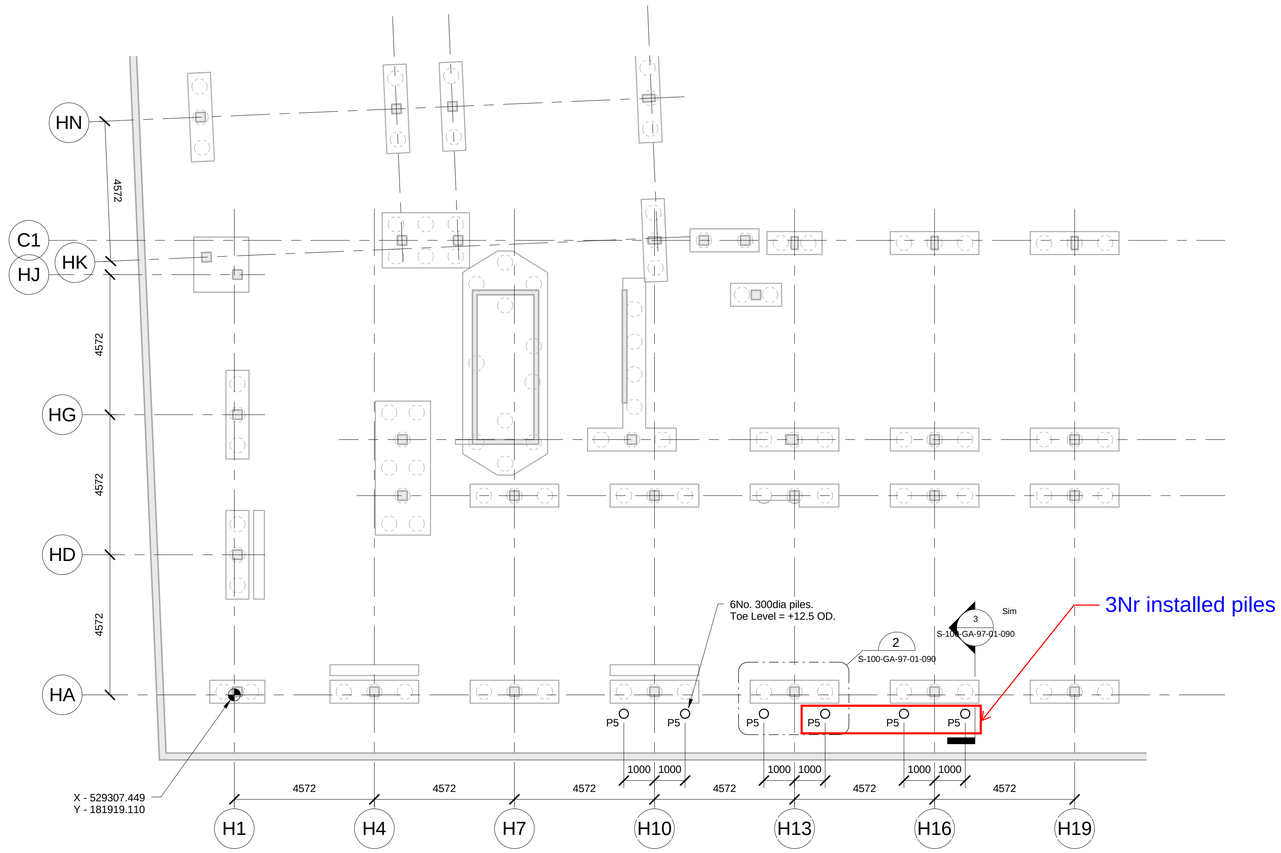
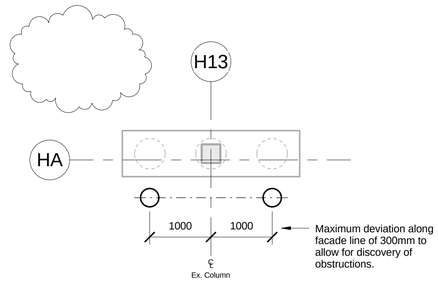


1 Early Piling Works Setting Out

1 : 100

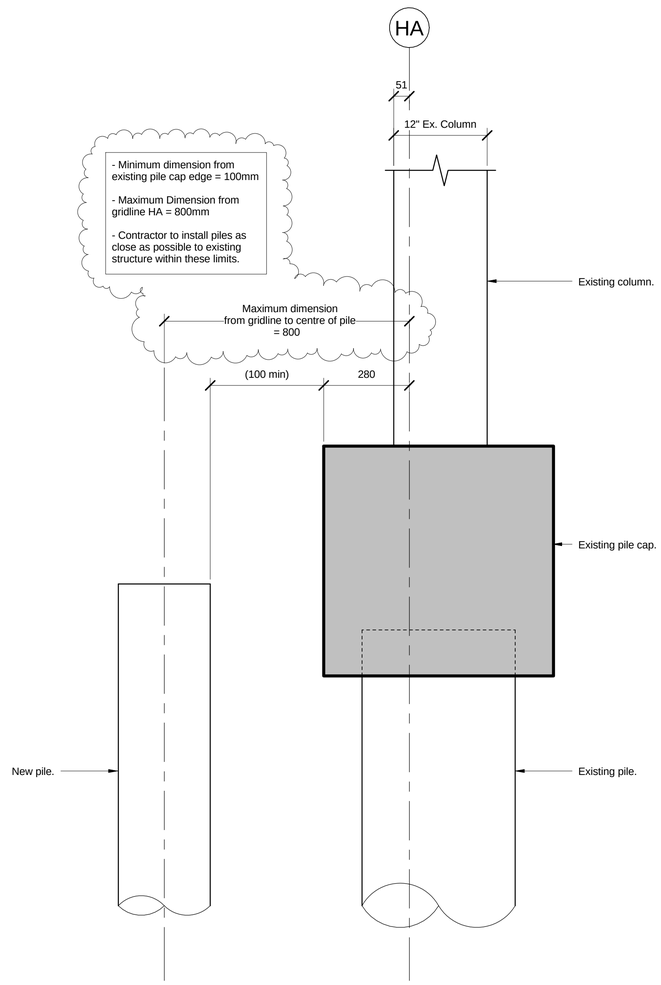
Pile Ref	Pile Dia (mm)	Toe Lvl (m AOD)	Cut-off level (m)	Applied loads at pilecap level			
				Axial SWL (kN)	Moment SWL (kNm)	Lateral Load SWL (kN)	Pile head fixity
P5	300	+12.5	+24.8	150	12	-	Free



Contractor to verify exact dimension between existing columns on site and set-out as above assuming grids H10-H16 to be on column lines.

2 Setting Out Constraints Plan (with reference to existing structure)

1 : 50



3 Setting Out Constraints Section

1 : 10

GENERAL NOTES:

1. All dimensions in millimetres.
2. All levels given in metres above ordnance datum.
3. Drawings to read in conjunctions with project specifications.
4. All piles to comply with the Arup Piling specification.
5. Pile toe levels have been rationalised to suit maximum loads.
6. All pile locations to be probed prior to pile construction.
7. In general, shallow subsurface obstructions that affect the piling are expected to be removed. The ground shall be backfilled with an engineered backfill to the approval of the Engineer prior to piling.
8. The Contractor's method of working shall allow for coring to penetrate obstructions remaining in the ground discovered by the probing or encountered at deeper depth during boring, as far as is reasonably practicable.
9. Due to site constraints there is minimal scope for repositioning of abortive piles. Therefore, the Contractor will need to consider details of the action and proposed remedial works so that if construction/logistical problems occur to ensure the pile can still be completed to the specified design criteria.
10. The Contractor shall debond the reinforcement bars above pile cut-off level using debonding foam. The Contractor shall submit product details for the debonding foam with his tender. The Contractor shall obtain all relevant licenses associated with the debonding product.
11. Pile integrity testing shall be carried out on all contract piles by the transient dynamic response (frequency response) method, with simulations and impedance profiles to be carried out on piles having anomalous test results.
12. Pile cut off to suit 75mm projection into pile cap. Pile reinforcement to extend an anchorage length into pile cap.
13. In accordance with BS 8500-1 the Design Chemical Class for the pile concrete shall be DC-3 (as defined in BS 8500-1: 2002 Table A.15).
14. The Contractor shall be responsible for the concrete mix design.
15. Due allowance to be given to sequencing and temporary works where installation of permanent works will affect existing structures. For example toe removal and lowering of slabs adjacent to perimeter retaining walls.
16. Monitoring of adjacent structures shall be carried out during temporary works and pile construction.

Issue	Date	By	Chkd	Appd
C02	08/02/13	WTC	JL	JE
Updated due to site constraints.				
C01	05/02/13	WTC	JL	JE
Construction Issue				

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Client

Derwent London
(West London and Suburban Property investments Ltd.)

Job Title

80 Charlotte Street

Structural
Early Piling Works
(Charlotte Street)

Scale at A1: As indicated

Discipline: Structural

Job No: **207329**

Drawing Status: **Construction**

Drawing No: **S-100-GA-97-01-090**

Issue: **C02**

06/02/2013 11:57:46

Do not scale

Pile Ref	Pile diameter (mm)	Toe Level (m AOD)	Applied loads at pilecap level			
			Axial SWL (kN)	Moment SWL (kNm)	Lateral Load SWL (kN)	Pile head fixity
P1	900	+5	1800	135	-	Free
P2 typically	1200	+5	2600	195	-	Free
P2 (central core)	1200	+5	2250	-	150	Rotational fixity only
P2T	1200	+5	2600/ -1400	195	-	Free
P3	1200	+0.5	3400	255	-	Free
P5	300	+12.5	150	12	-	Free
P6	235	+5	315	25	-	Free

NOTES
Axial loads +ve compression, -ve tension.
P2core, P5 and P6 loads based on FoS = 2.6. Other piles assumed FoS = 2.2.
A load factor, γ_f = 1.4, may be used to convert from SWL to ULS.
Applied moment is based on 75mm eccentricity due to maximum specified construction tolerance.
Applied lateral load is due to base shear under central stability core.
Contractor to determine coexistent bending and shear forces for structural design of piles.
Minimum steel to all piles as per BS EN 1536.
Minimum cage length to all piles 10m.
75mm minimum cover to be provided to reinforcement.
Full depth cage required in tension piles.
Full tension lap into pilecap (40x D) required for tension piles.
Maximum vertical deflection of piles at working load to be not more than 0.5% of pile diameter.

Refer to Dwg No. *S-100-DE-XX-0-302* & *S-100-DE-XX-0-309* for piles related to foundation strengthening

Further site investigation and design required due to existing foundations

3Nr installed piles

Survey of existing pile required to confirm new pile location

Piling
1 : 100

GENERAL NOTES:

1. All dimensions in millimetres.
2. All levels given in metres above ordnance datum.
3. Drawings to read in conjunctions with project specifications.
4. All piles to be contractor designed and to comply with the Arup Piling Specification. Refer also to all relevant Geotechnical reports.
5. Pile toe levels have been rationalised to suit maximum loads.
6. GI has shown that bores below +5.0mAOD may require fluid support to maintain bore stability.
7. Minimum 2No maintained working load tests required to allow verification of factor of safety assumed in design.
8. No temporary works piles e.g. to support tower cranes or to act as anchor piles for the working load tests are shown on the drawings.
9. All pile locations to be probed prior to pile construction.
10. In general, shallow subsurface obstructions that affect the piling are expected to be removed. The ground shall be backfilled with an engineered backfill to the approval of the Engineer prior to piling. Attention is drawn particularly to areas in Block K, the "pocket park" and adjacent to the Whitfield Street retained façade where deeper foundations exist.
11. The Contractor may propose to leave existing pile caps and ground beams in place. In this case the Contractor shall allow for forming the piles through these obstructions.
12. The Contractor's method of working shall allow for coring to penetrate obstructions remaining in the ground discovered by the probing or encountered at deeper depth during boring, as far as is reasonably practicable.
13. Due to site constraints there is minimal scope for repositioning of abortive piles. Therefore, the Contractor will need to consider details of the action and proposed remedial works so that if construction/logistical problems occur to ensure the pile can still be completed to the specified design criteria.
14. The Contractor shall debond the reinforcement bars above pile cut-off level using debonding foam. The Contractor shall submit product details for the debonding foam with his tender. The Contractor shall obtain all relevant licenses associated with the debonding product.
15. Cross hole sonic logging is to be carried out on 15 % of all working piles, with the exception of small diameter piles with a diameter of 450mm or less.
16. Pile integrity testing shall be carried out on all contract piles by the transient dynamic response (frequency response) method, with simulations and impedance profiles to be carried out on piles having anomalous test results.
17. Pile cut off to suit 75mm projection into pile cap. Pile reinforcement to extend an anchorage length into pile cap.
18. The pile reinforcement shall be designed for the specified lateral loads and so that the piles do not crack under the effects of short term heave where the ground is excavated post-piling.
19. In accordance with BS 8500-1 the Design Chemical Class for the pile concrete shall be DC-3 (as defined in BS 8500-1: 2002 Table A.15).
20. The Contractor shall be responsible for the concrete mix design.
21. All works to piling platforms to suit phasing, access and site logistics as defined by main contractor.
22. Due allowance to be given to sequencing and temporary works where installation of permanent works will affect existing structures. For example toe removal and lowering of slabs adjacent to perimeter retaining walls.
23. Monitoring of adjacent structures shall be carried out during temporary works and pile construction.
24. Foundation strengthening solutions are being developed which are likely to incorporate low headroom small diameter or mini piles extending to +5mOD. The equipment will need to be able to operate in 2.9m headroom.
25. The Contractor is to review the existing building information and make their own assessment of potential clashes and obstructions.
26. Refer to Dwg No. *S-100-DE-XX-0-302* & *S-100-DE-XX-0-309* for piles related to foundation strengthening.

Key

- P1 — Pile Location
- P2T — Tension Pile
- Existing Pile (indicative location where known)

Issue	Date	By	Chkd	Appd
T2	29-05-13	WTC	JL	JE
	Tender Addendum Issue			
T1	20-03-13	WTC	JL	JE
	Tender issue			

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Client
Derwent London
(West London and Suburban Property investments Ltd.)

Job Title
80 Charlotte Street

Structural
Pile Layout
General Arrangement

Scale at A0: As indicated
Discipline: Structural
Job No: 207329
Drawing Status: Tender Addendum
Drawing No: S-100-GA-97-0-001
Issue: T2

29/05/2013 18:02:27