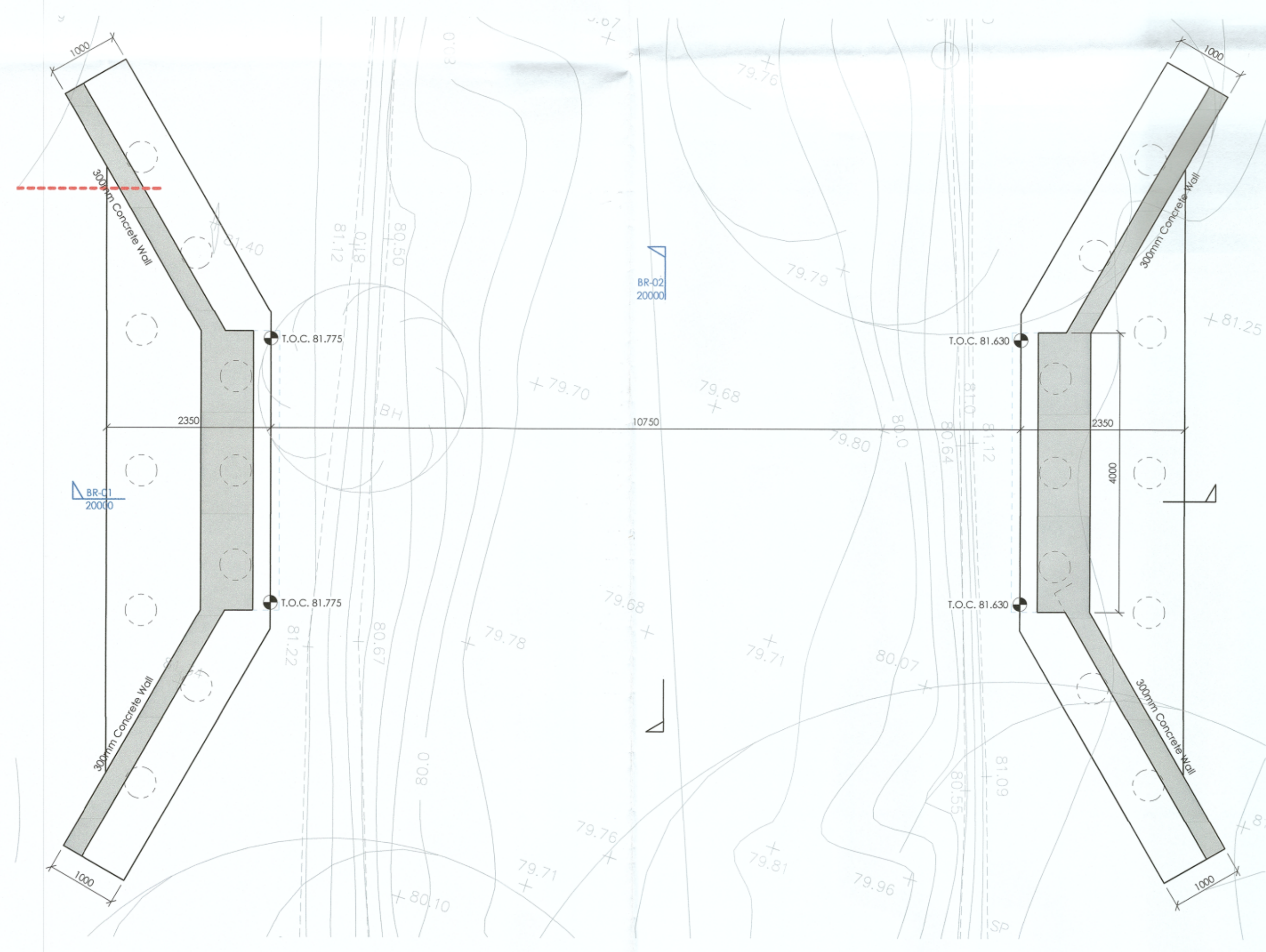


Pile Load, Level & Co-Ordinate Table		
Pile No.	Vertical	
	SLS	Horizontal
P1	100	25
P2	125	25
P3	100	25
P4	150	25
P5	100	25
P6	150	25
P7	150	25
P8	100	25
P9	125	25
P10	100	25
P11	100	25
P12	125	25
P13	100	25
P14	150	25
P15	100	25
P16	150	25
P17	150	25
P18	100	25
P19	125	25
P20	100	25

BRIDGE ABUTMENT PILE LAYOUT
1:50



PLAN ON BRIDGE ABUTMENT
1:50

REINFORCED CONCRETE

a. For any reinforced concrete that is part of a foundation structure these notes should be read in conjunction with the foundation notes.

b. All reinforced concrete workmanship and materials to be in accordance with the requirements of BS EN 1992, BS EN 13670 and the National Structural Concrete Specification.

c. Reinforced concrete elements in contact with the ground to receive 50mm mass concrete blinding to facilitate fixing of reinforcement unless agreed otherwise. Concrete blinding to be Designated Mix Gen 3 or a designed mix to achieve grade C16/20 in accordance with BS EN 206-1 / BS 8500-1.

d. All reinforced concrete unless noted otherwise to be Designated Mix RC40 or a designed mix to achieve grade C32/40 in accordance with BS EN 206-1 / BS 8500-1. Nominal maximum size of aggregate 20mm. Concrete to be slump class S3.

e. Reinforcement to comply with BS4449, BS4482 or BS4483, and shall be bent in accordance with BS8666:2005. High yield reinforcement to be type 2 deformed bars.

f. Minimum lap length to all reinforcement to be 40 times the smallest bar diameter unless noted otherwise. Minimum lap to mesh reinforcement to be 400mm and mesh to have flying ends.

g. Fresh concrete to be thoroughly compacted using vibrating poker to produce a dense homogeneous concrete.

h. For each mix designation fresh concrete to be sampled and cubes cast for testing at rate of 3no. per 18cu meter placed, min 1no. per load, min 3no. per pour, min 3no. per day. Cube sets to be tested at 7 and 28 days with one spare in accordance with BS EN 12390.

i. Exposed surfaces of all freshly cast concrete to be cured over 7 days during which time it shall not be allowed to dry nor be subject to frost.

j. Sprayed curing agent Concure or similar to be used on surface of all slabs.

k. Cover to all faces to be maintained with the use of proprietary chairs, spacers, etc. provided by the contractor, to adequately support reinforcement during placement and casting of concrete. Pieces of wood, bricks etc. will not be permitted. All spacers are to be in accordance with BS7973.

l. Cover to foundation reinforcement to be 75mm bottom & sides if in direct contact with ground, 50mm bottom cover if against mass concrete fill or blinding, 50mm side cover if formed sides are used.

m. Surface finish to areas exposed above ground on completion to be 'Plain' to BS EN 13670 unless noted otherwise; exposed below ground or hidden above ground (lags of ground beams to be built off, walls to be plastered, slabs to be screeded) on completion to be 'Ordinary' to BS EN 13670; hidden below ground on completion to be 'Basic' to BS EN 13670.

DESIGNERS CDM NOTES ON RESIDUAL RISKS

THE SAFETY, HEALTH AND ENVIRONMENTAL ISSUES NOTED BELOW ARE IN ADDITION TO THE NORMAL HAZARDS AND RISKS FACED BY A COMPETENT CONTRACTOR WHEN DEALING WITH THE TYPE OF WORKS DETAILED ON THIS DRAWING.

CONSTRUCTION HAZARDS AND RISKS

- None relevant to this drawing

MAINTENANCE/ CLEANING HAZARDS AND RISKS

- None relevant to this drawing

DEMOLITION HAZARDS AND RISKS

- None relevant to this drawing

GENERAL NOTES

1. This drawing is to be read in conjunction with all relevant Architect's / Engineer's drawings, specifications and CDM documentation.
2. This drawing has been produced electronically and may have been photo reduced or enlarged when copied. Work to figured dimensions only. DO NOT SCALE. All dimensions to be checked on site. Any errors or omissions to be reported to the engineer immediately.
3. All dimensions are in millimeters and levels in meters except where shown otherwise.
4. Where proprietary products are specified these may be substituted by an equivalent product subject to approval by the Engineer. All products are to be installed strictly in accordance with the manufacturer's recommendations.
5. Before commencing construction the Contractor is to ascertain the position and depth of private and utility services and other plant or equipment on and adjacent to the site and report any conflicts with proposed works to the Engineer.
6. All work and materials not specified shall be in accordance with the NHC Standards' technical requirements and guidance (ISBN 0907257 series).
7. All construction products to have CE Marking in accordance with the relevant European Technical Standards in force at the time.
8. This drawing is copyright and shall not be copied in whole or in part without written permission of SWJ Consulting.
9. Until technical approval has been obtained from the relevant Authorities it should be understood that all drawings issued are preliminary and NOT for construction. Should the contractor start site work prior to approval being given, it is entirely at his own risk.
10. Should there be any discrepancies between details indicated on this drawing and those indicated on other drawings the Engineer should be informed PRIOR to construction on site.

PILE PERFORMANCE SPECIFICATION

- a. These notes should be read in conjunction with the foundation notes.
- b. The piling is to be designed by the Piling Contractor in accordance with the following design criteria.
- c. All piling works to be in accordance with the relevant project specification, the Institution of Civil Engineers 'Specification for piling' and SPERW the 'Specification for piling and embedded retaining walls'.
- d. The Piling Contractor should visit site to satisfy himself that the access / site working area constraints are allowed for.
- e. The Piling Contractor should review the available ground investigation reports and carry out any additional investigations they deem necessary to produce a robust and economical pile design.
- f. Precast Concrete Driven / CFA bored piles are to be utilised unless agreed otherwise. Piles are to be sleeved as necessary through the collapsible soils.
- g. Copies of pile calculations are to be submitted to the Engineer for approval 10 working days prior to the works commencing.
- h. The maximum pile diameter is to be 450mm.
- i. Precast concrete piles to be designed as Class 1 with mechanical interlocking Class A joints to BS EN 12794 unless justified otherwise by the Piling Contractor.
- j. Piles to be installed within the following tolerances: Maximum deviation from plan position 75mm. Maximum deviation from pile vertically 1 in 25.
- k. If piles are out of installation tolerance, the Engineer will need to reconsider the adequacy of the foundation design. No forcible correction will be permitted. If piles are misaligned by more than 150mm in any direction, or are more than 5 degrees from the specified rake, they are to be replaced, or additional piles provided in accordance with design modifications agreed with the Engineer.
- l. The piling contractor is to provide a detailed survey of all completed pile positions together with dimensional identification of all piles out of tolerance.
- m. The piles shall be designed using the design loads detailed in the schedule and shall be able to carry these loads without exceeding the permissible working stresses of the materials in the pile, the bearing strata and without exceeding the required maximum settlements.
- n. Precast concrete piles to be designed for min overall factor of safety of 2.0. CFA piles to be designed for min overall factor of safety of 2.5. If working pile maintained static load test to 1.5 times working load in accordance with BS8004:1986 is carried out, if no working pile test is to be carried out then min overall factor of safety of 3.0 should be employed.
- o. Loads in the schedule are Characteristic Unfactored Loads To BS EN 1991-1-1.
- p. The pile loads quoted have no allowance for negative skin friction. The Piling Contractor is to make due allowance within the pile design for negative skin friction as appropriate.
- q. All piles to be designed for a minimum uplift force of 50kN.
- r. The Piling Contractor shall ensure that all horizontal loads at the head of the piles are adequately catered for. All piles are to be designed for a nominal safe lateral working load of 2.5% of the design vertical load or 10kN, whichever is the greater, assuming uni-axial bending and full pile head fixity unless noted otherwise.
- s. All loads should be applied concentrically with the axis of the pile or center of gravity of the pile group, allowance shall be made in the pile design for inaccuracies in positioning piles such that the piles accommodate the resulting moment or are suitably restrained.
- t. The maximum total permissible settlement at any pile at working load shall be 10mm. Alternatively, at 1.5 times the working load shall be 15mm. These values should include for any allowances required for the elastic shortening of the pile under load.
- u. Dynamic testing is to be carried out on min. 2.5% of each type / size of pile using the CAPWAP method and the results of the testing are to be forwarded to the Engineer for comment. The location of piles to be tested is to be agreed with the Engineer.
- v. All CFA piles shall be subject to integrity testing.
- w. The Piling Contractor is to provide written confirmation that the designed and installed piles are suitable for the design loads.
- x. The finished piles are to extend min. 50mm into pile caps / ground beams. Pile reinforcement is to extend min. 50 times the bar diameter past the cut off level and be bent on site to provide a full anchorage length into pile caps / ground beams.
- y. Precast piles initially to be left at least 450mm above cut off level before being cut down to the required levels.
- z. CFA pile heads are to be cut initially at least 150mm above cut off level before being cut down to the required levels.
- aa. All concrete in contact with the ground to be minimum ACEC Class AC-1s, DS-1 in accordance with table A2 to BS8500-1.

P1	First Issue, Issued For Comment.	24/04/23	RPW
REV	REVISION DETAILS	DATE	DRAWN BY
CLIENT	ORIGINATOR		
PROJECT	TITLE		
Time Out Form	Bridge Foundation Layout	SCALE	DRAWN
Mill Lane, Alvescot, Oxfordshire, OX18 2QJ		1 : 50	CHECKED
			APPROVED
PROJECT	ORIGINATOR	ZONE	LEVEL
02781	SWJ	XX	XX
		DR	S
JOB NO.	PURPOSE OF ISSUE	STATUS	REVISION:
02781	FOR COMMENT	S3	P1