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LONDON OFFICE
14 The Green
Richmond · Surrey TW9 1PX

EXETER OFFICE
3 The Courtyard
New North Rd
Exeter · Devon EX4 4EP

BASINGSTOKE OFFICE
Grove House, Lutyens Close
Chineham Court
Basingstoke · Hampshire RG24 8AG

info@structurehaus.com
www.structurehaus.com

Our ref: 02270E/KB/Report
Email to: thorvertonpc@gmail.com
Nick.bright1@btinternet.com

Ms A Marshall
Thorverton Parish Council Clerk
Dinneford House
Dinneford Street
Thorverton
EX5 5NU

7th June 2018

Dear Ms Marshall,

QUARRY CAR PARK WALL

Brief

This letter has been prepared on behalf of our client, Thorverton Parish Council, care of Ms Marshall. We have been appointed to provide guidance on the general evident visual condition and necessary remedial works to the existing wall between Dark Lane and the public car park, known as Quarry Car Park, Thorverton, Exeter. A section of the existing wall had a significant horizontal crack and was subsequently demolished to avoid an impending structural collapse, please see photograph, Figure A of the crack pre-demolition.

Introduction

The initial site visit took place on 24th October 2017 in dry, overcast, cool conditions. Approximately 50m of Dark Lane was shut to vehicular traffic. Road closure signs were located at the junction with Bullen Street and adjacent to the rear of the car park. Pedestrian access was maintained. Plastic orange safety fencing had been pegged into the slope on the car park side to highlight the extent of wall which had been demolished and to prevent access to the top of the slope.

The wall is approximately 450-500mm wide with the top gently sloping, increasing in height. The lane slopes up towards the rear of the quarry car park. The car parking area is relatively level, with a sloped bank up towards Dark Lane covered in quite dense vegetation. At the Bullen Street end the wall is approximately 800mm high, increasing to approximately 1800mm high, measurement taken from Dark Lane side. The wall is constructed of random stonework with an

LONDON OFFICE 020 8940 7810
EXETER OFFICE 01392 363497
BASINGSTOKE OFFICE 01256 338691
ASSOCIATED OFFICES Essex Stuttgart Singapore

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VAT Registration Nº GB 190 6091 09

in-situ concrete coping and raised/ribbon style mortar joints. The first 10m section of wall from the Bullen Street end appears to have been rebuilt recently as the stonework is more regular.

Evident Structural Condition

We undertook a visual inspection of the wall from both the car park side and Dark Lane. The length of wall visually inspected was approximately 70m. The section of wall which had been part demolished is beyond repair and will require rebuilding. Please see photo, Figure B. Typically, the remaining wall appears to be in reasonable structural condition with no obvious signs of any significant structural defects. The wall is plumb with minimal cracking, nothing beyond aesthetic deterioration due to weathering over several years.

Following our initial visit, we requested that a trial pit should be dug to expose the existing foundation of the demolished section of wall. The trial pit was excavated on 28th February and we attended site on 5th March 2018. The conditions were wet and cold, and areas of snow were still visible on the ground. From viewing the trial pit, we were able to determine the following;

1. The wall had a stone foundation consisting of larger stone blocks laid approximately 200-400mm below the ground level. See Figure C
2. The foundation stones were placed on what appears to be made ground directly underlain by a soft-red/brown clayey type strata.
3. Fragments of the old quarry stone are visible in the spoil.

The trial pit was backfilled to reduce erosion and any further disruption to the existing wall.

Conclusions and Recommendations

Our conclusions and recommendations are as follows;

1. Much of the wall appears to be in reasonable structural condition with no obvious visual defects.
2. We believe the horizontal cracking which formed in the section of wall (now demolished) was due to land slippage. As the banked ground is largely man made, it is likely that the ground local to this area has a higher extent of fill/softer in nature and is more susceptible to movement, especially when water logged.
3. We would recommend that the remaining stonework and footing in the damaged area is carefully removed.
4. Allow for the installation of a minimum 3No. mini screw piles into the ground in line with the wall location. A reinforced concrete ground beam can be cast, tied into the screw piles. Or alternatively a concrete encased steel ground beam. The ground beam will

form the foundation for the replacement section of stone wall. Refer to sketches SK10-12.

5. The new stonework wall should be toothed into the existing wall with the addition of stainless steel helibars.
6. Any loose mortar joints should be repointed.

Reservations

As instructed, we have only carried out a limited survey of the wall and have not inspected foundations which are covered or areas which were inaccessible and are therefore unable to report that any such part of the wall is free from defect. As a result, this report does not in any way constitute or can be construed as constituting a representation or warranty, actual or implied, regarding such parts.

We trust you find the above information to be clear, if however, you have any queries, please do not hesitate to contact the office.

Yours sincerely,

Kathryn Bostock
structureHaus Ltd

Enc.

Copy to: LA & DP - SH (email only)

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Figure A

Figure B

Figure C

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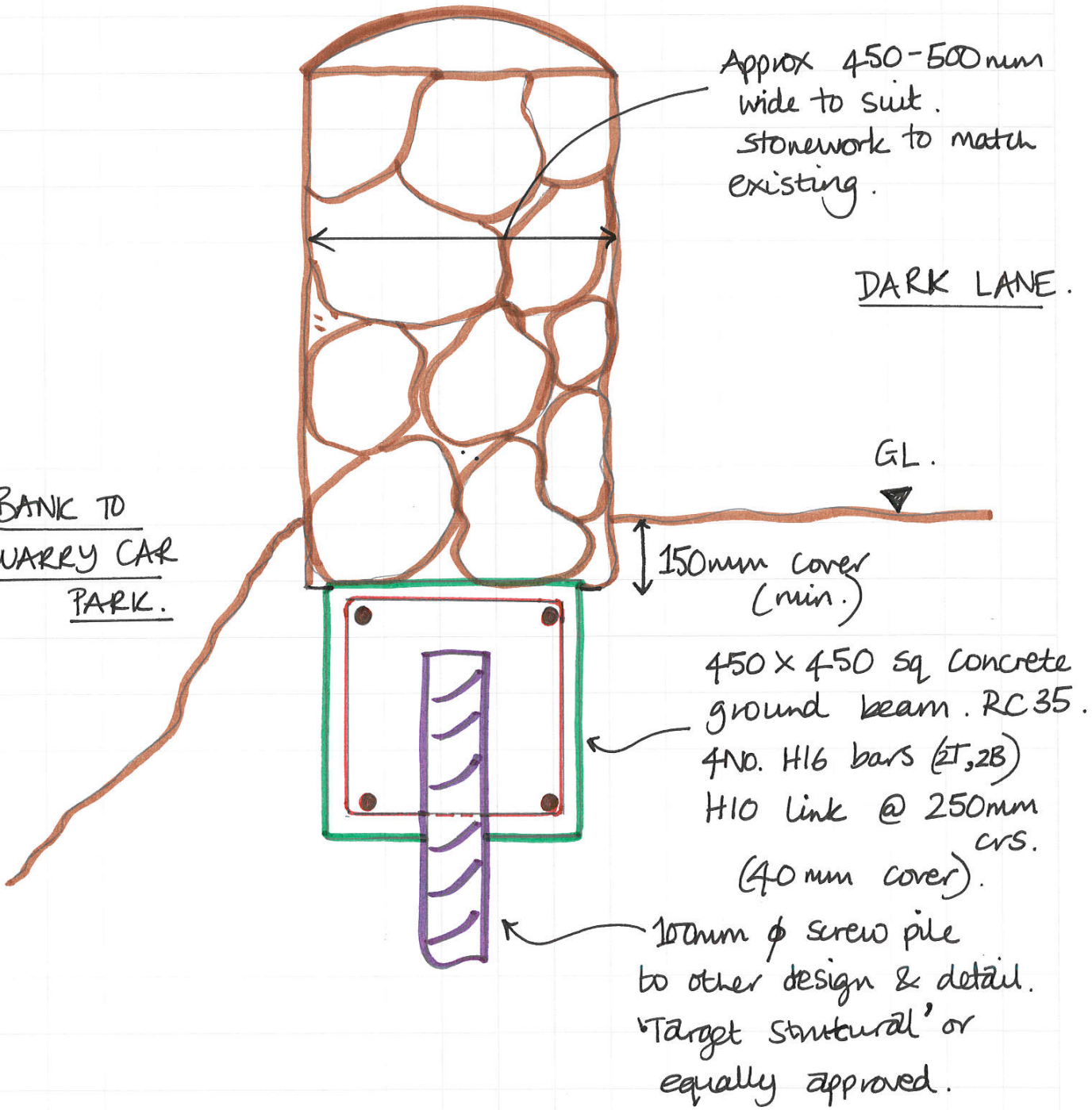
Ref	02270E.
Date	4.6.18.
Sheet	SK10
By	KB.

Sketch

Contract Quarry Car Park.



(Sketch not to scale).

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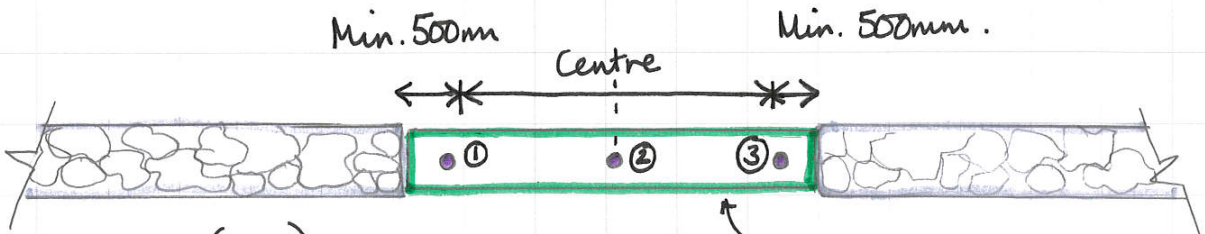
Ref	02270 E.
Date	4·6·18
Sheet	SK11.
By	KB.

Sketch

Contract Quarry Car Park.

Length of replacement wall.



Pile load (SLS).
100 kN. (worst case).

450 x 450 RC ground beam. RC 35.

Pile design to others details.
Embedment depth to be confirmed by specialist contractor.
Target structural or equally approved.

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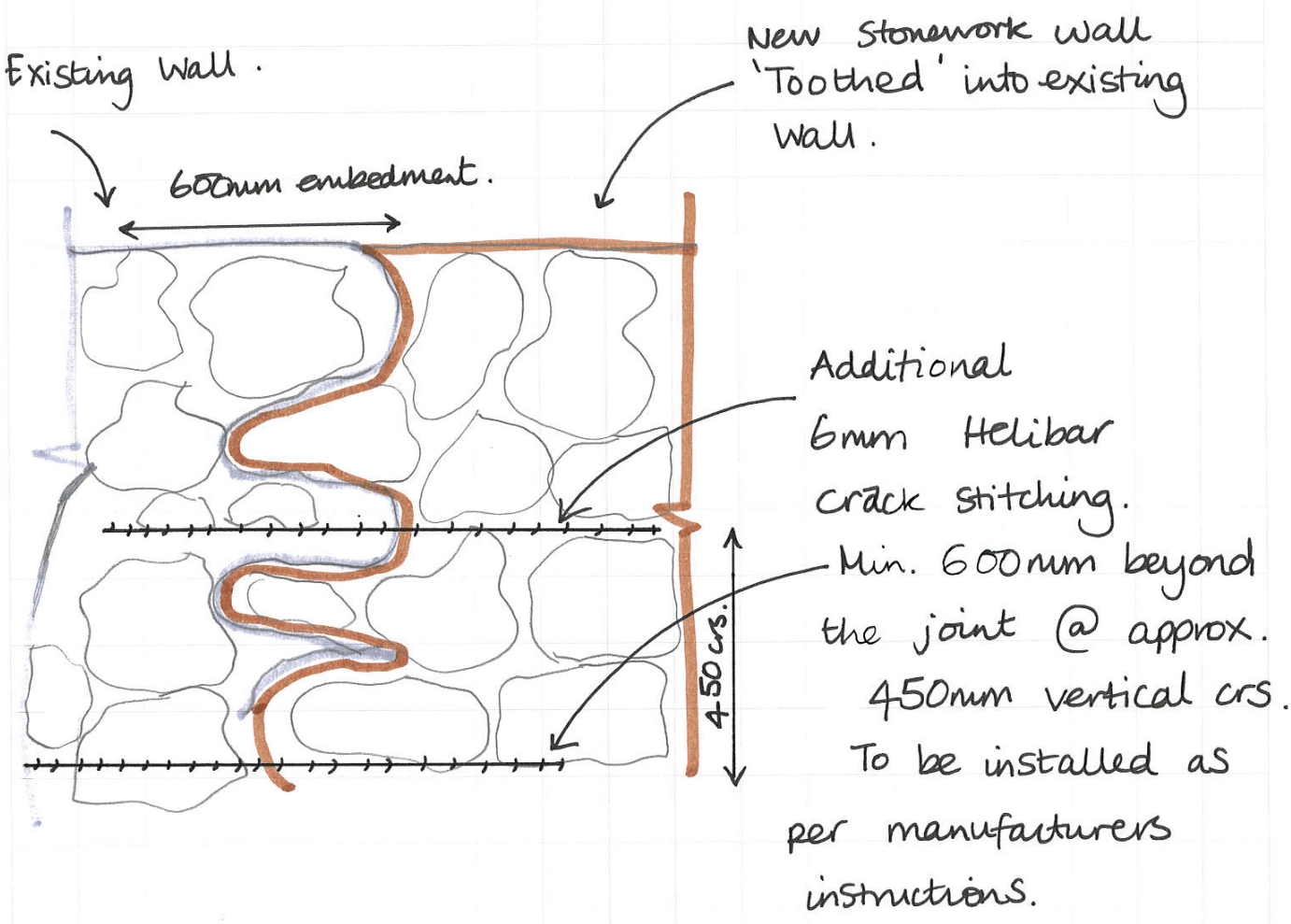
Sheet	SK12.
By	KB.

Sketch Contract Quarry Car Park.

New to Existing Stonework



Sketch not to Scale.