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STRUCTURAL AND CIVIL ENGINEERING CONSULTANTS

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Ref – JR/4097

Date – 3 December 2023

Grace Machin Planning & Property
2 Hollowstone
The Lace Market
Nottingham
NG1 1JH

Dear Mr G Machin

5 Bradleys Lane, Hoveringham, Nottingham, NG14 JG - Structural Inspection

In accordance with your instructions our engineer attended the above property on 24 November 2023 to carry out a structural inspection of property.

A purely visual inspection was carried out. No parts of the structure concealed by finishes were opened up for inspection and therefore we are unable to confirm they are free from defect, unless noted otherwise.

The property is a two-storey semi-detached dwelling of apparent traditional clay masonry construction that was built during the first half of the 20th century. The property was unoccupied and derelict at the time of inspection.

A brief desk study revealed the following:

- The historic OS map sequence indicates the original cottage dwelling was constructed circa the mid 1900's. The property was initially redeveloped between 2007 – 2010 before seemingly being abandoned.
- BGS mapping data indicates the property is located on a deposit of Alluvium - Clay, Silt, Sand And Gravel overlying Gunthorpe Member - Mudstone.
- The interactive map viewer on the Coal Authority website indicates the site is not within a coal mining area.
- The Flood Map for Planning on the Gov.uk website indicates the property is located in Flood Zone 2/3 – medium to high risk flood risk category.

We made the following observations:

1. The external elevations are presented in clay brickwork containing occasional header coursing to the original property. The presence of brick headers indicates the external walls are likely to be of solid construction. The roof is not present however is of a duo-pitch profile. Intermediate ceiling support beams were present from the historic roof structure. The timber beams were exhibiting significant decay to the tops of the beams. 2No chimney stacks extend through the original roof pitch.
2. The 1st floor structure was not present except for intermediate timber floor beams. The timber beams were exhibiting significant decay to the tops of the beams.

3. The plumb and level of the external and internal walls were checked at selected locations and generally no extreme dips or leans were detected.
4. Within the northern side for the property an existing internal pier appears to have settled historically by some 150mm indicated within the doorframe and wall dado rail. No vertical movement was noted on the front elevation indicating the pier is unlikely to be tied into the pier and potentially doesn't have a competent foundation.
5. On the original front elevation diagonal cracks and vertical slippage of the brick arches were observed above the ground floor window heads. The remainder of the property appears to have had new proprietary steel lintels installed as part of the extension works.
6. Continuing to the north east corner of the gable wall it appears that a section of wall had collapsed resulting in lateral movement of circa 200mm in the masonry and rotation of the masonry at the corner. Loose bricks are still present within the outerleaf of masonry. Internally cracking within the bedjoints are visible reflecting the movement observed. The corner is also noted to be an interface between the solid brick masonry and new cavity construction. The outerbrickwork has been toothed in around the corners, however the blockwork abuts the vertical face of the brickwork on the inner leaf. It is not known if masonry ties are present to the inner leaf of masonry.
7. The tops of the exposed walls shows signs of weathering of the mortar joints with areas of slight displaced masonry.

The inspection revealed no indication of significant structural movement of a progressive nature due to the presence of the surrounding trees.

The masonry fracturing and slippage of soldier coursing observed in the front wall is considered to be associated with an absence of lintel support to the outer face of brickwork, potential timber decay of the inner timber lintel and lack of a floor or roof structure providing lateral stability to the wall. We recommend the timber lintels are replaced with steel lintels, and the masonry above the window heads either repaired by crack stitching or the solid brick masonry is rebuilt locally.

The defects to the north gable will require the partial demolition of the defective areas of masonry and effective re-building of the corner up to the proposed gable wall level. The inner leaf of blockwork will need to be effectively tied into the solid brickwork at the corner with remedial ties where new or crack stitching around the internal corner of the wall where the blockwork is to remain in place.

The internal pier that has apparently dropped is proposed to be removed as part of the new dwelling configuration, hence no further remedial works for the pier are required.

The remaining timber floor and ceiling beams are suffering from significant decay therefore should be replaced or the floors re-designed to span the full room length.

All remaining timber found within the property should be considered to be suffering from decay due to the length of exposure to the weather and should be replaced unless proven to be free of decay and of sound construction.

Re-pointing and making good of the top 1m of masonry to all the walls should be considered as part of the remedial works to compensate for the building left open to the weather for 10-15 years. The tops of the chimneys will also need some minor re-pointing to make good.

The insulation within the cavity walls should be expected to be required to be replaced as this will have been affected by water ingress.

In our opinion the structural integrity of the property can be resolved by remediating the local defective items as mentioned above and by installing the floors and roof structures in accordance with Regulations Part A.

As part of retrospective inspections by Building Control it may be required that the existing foundations are exposed by trial pits to confirm the size and depths of the strip footings are adequate and the ground conditions below, unless records of any previous inspections are available.

We enclose a selection of photographs acquired during the inspection, marked up sketches for the remedial works required to the existing structure and the structural layout strategy for the proposed dwellings.

Please call to discuss any queries.

Yours sincerely

A solid black rectangular box used to redact the signature of James Roberts.

James Roberts – BEng (Hons) CEng MICE
Director

Enc. Selected Photographs



SOUTH EAST ELEVATION - FRONT



SOUTH WEST ELEVATION - LEFT HAND SIDE



NORTH WEST ELEVATION – REAR – LOOKING NORTH EAST



NORTH WEST ELEVATION – REAR – LOOKING EAST



NORTH EAST ELEVATION – RIGHT HAND SIDE



NORTH ELEVATION – RIGHT HAND SIDE



FRONT ELEVATION - STEPPED FRACTURES ABOVE GROUND FLOOR WINDOW



FRONT ELEVATION - STEPPED FRACTURES ABOVE GROUND FLOOR WINDOW



FRONT ELEVATION - STEPPED FRACTURES ABOVE GROUND FLOOR WINDOW



FRONT / RIGHT HAND SIDE ELEVATION – STRUCTURAL DEFECTS TO BUILDING CORNER



RIGHT HAND SIDE GABLE – STRUCTURAL DEFECTS



RIGHT HAND SIDE GABLE – STRUCTURAL DEFECTS FROM THE INSIDE



GENERAL VIEW WITHIN SOUTH EAST ROOM – LOOKING SOUTH



GENERAL VIEW WITHIN SOUTH EAST ROOM – LOOKING NORTH



GENERAL VIEW WITHIN SOUTH WEST ROOM – LOOKING SOUTH



GENERAL VIEW WITHIN SOUTH WEST ROOM – LOOKING NORTH-EAST



GENERAL VIEW WITHIN NORTH WEST ROOM – LOOKING SOUTH



GENERAL VIEW WITHIN NORTH WEST ROOM – LOOKING EAST



GENERAL VIEW WITHIN NORTH WEST ROOM – LOOKING NORTH



GENERAL VIEW WITHIN NORTH EAST ROOM – LOOKING SOUTH



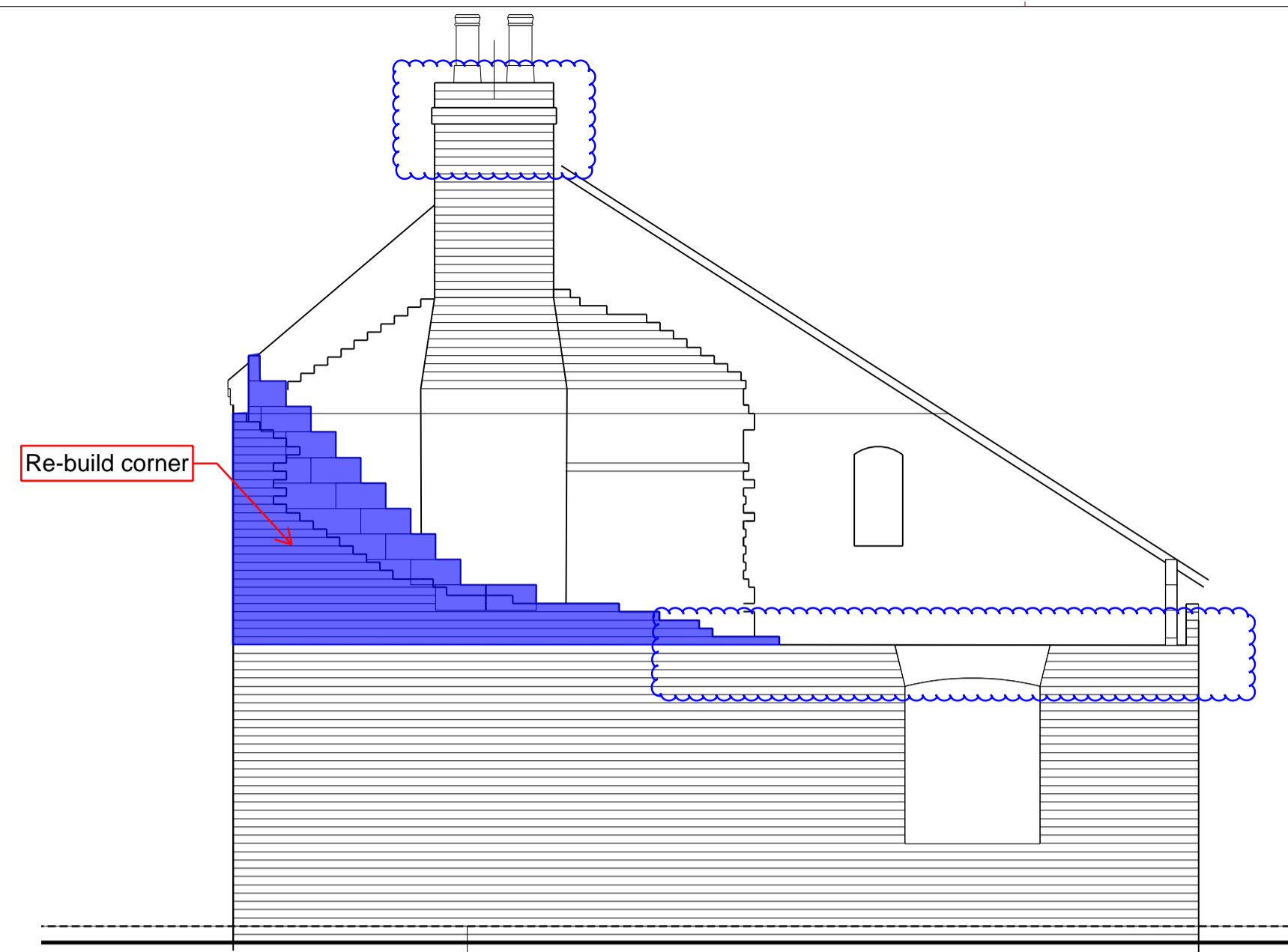
GENERAL VIEW WITHIN NORTH EAST ROOM – LOOKING EAST



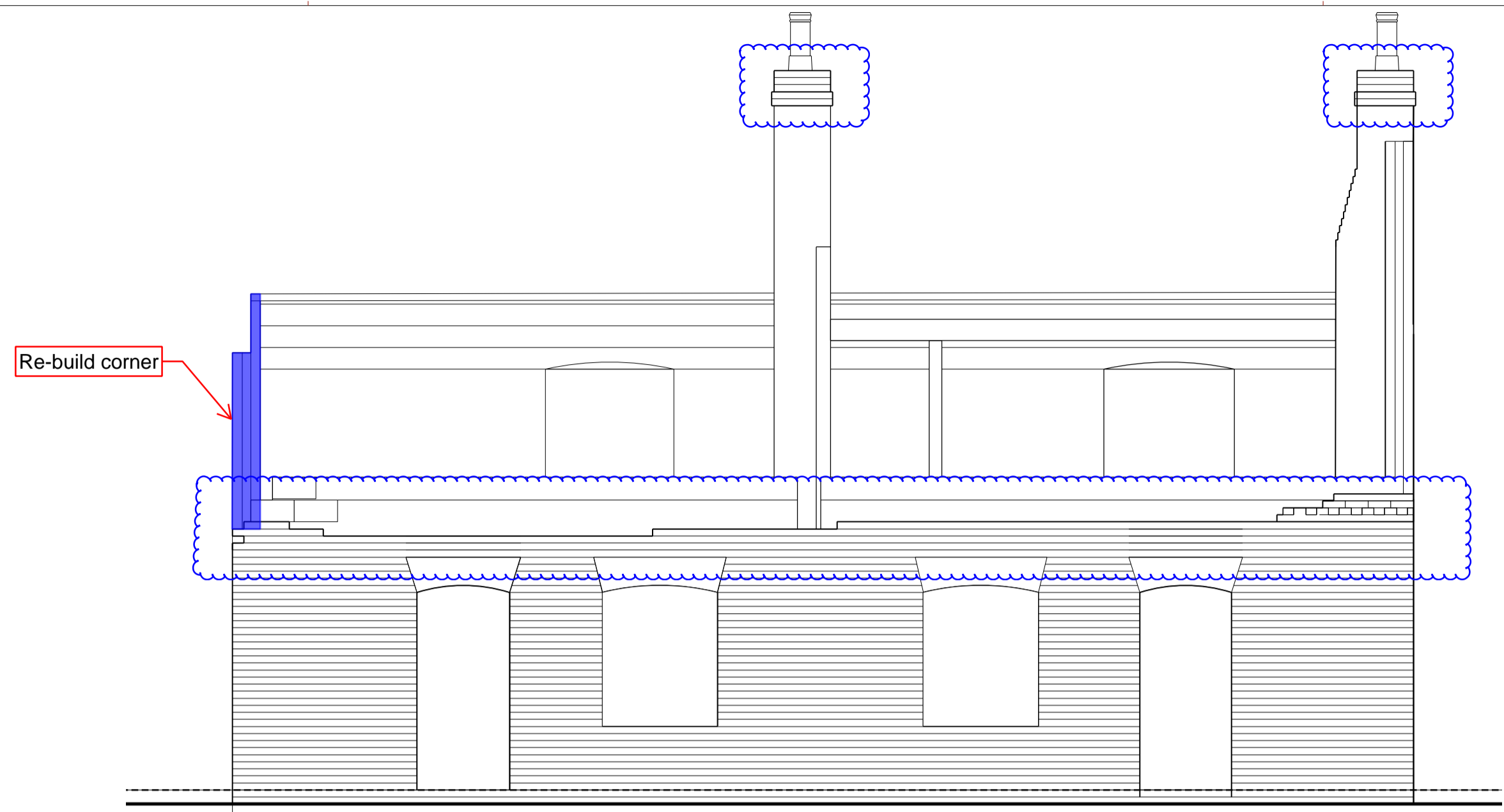
GENERAL VIEW WITHIN NORTH EAST ROOM – LOOKING NORTH



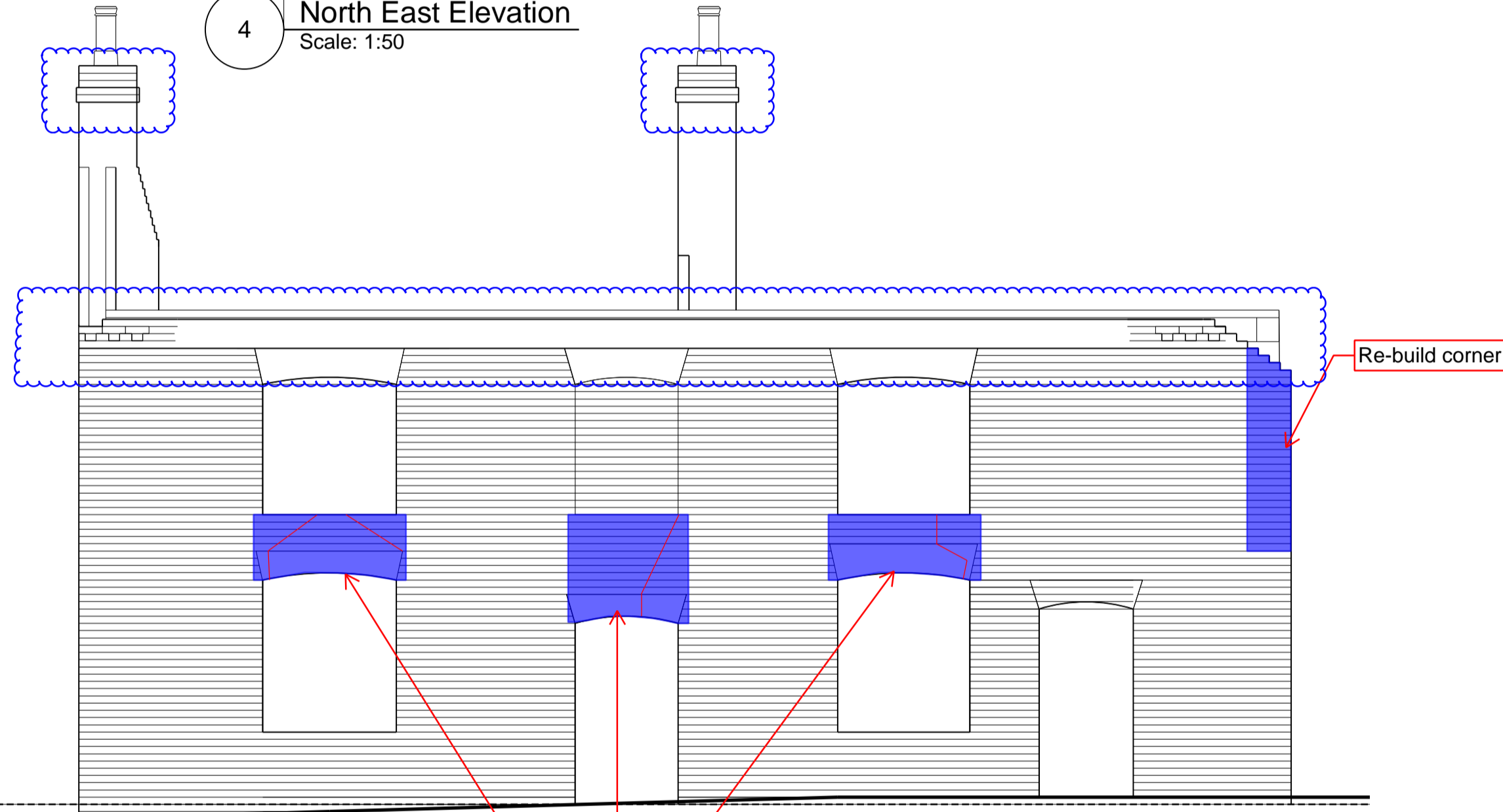
GENERAL VIEW WITHIN NORTH EAST ROOM – LOOKING NORTH



4 North East Elevation
Scale: 1:50

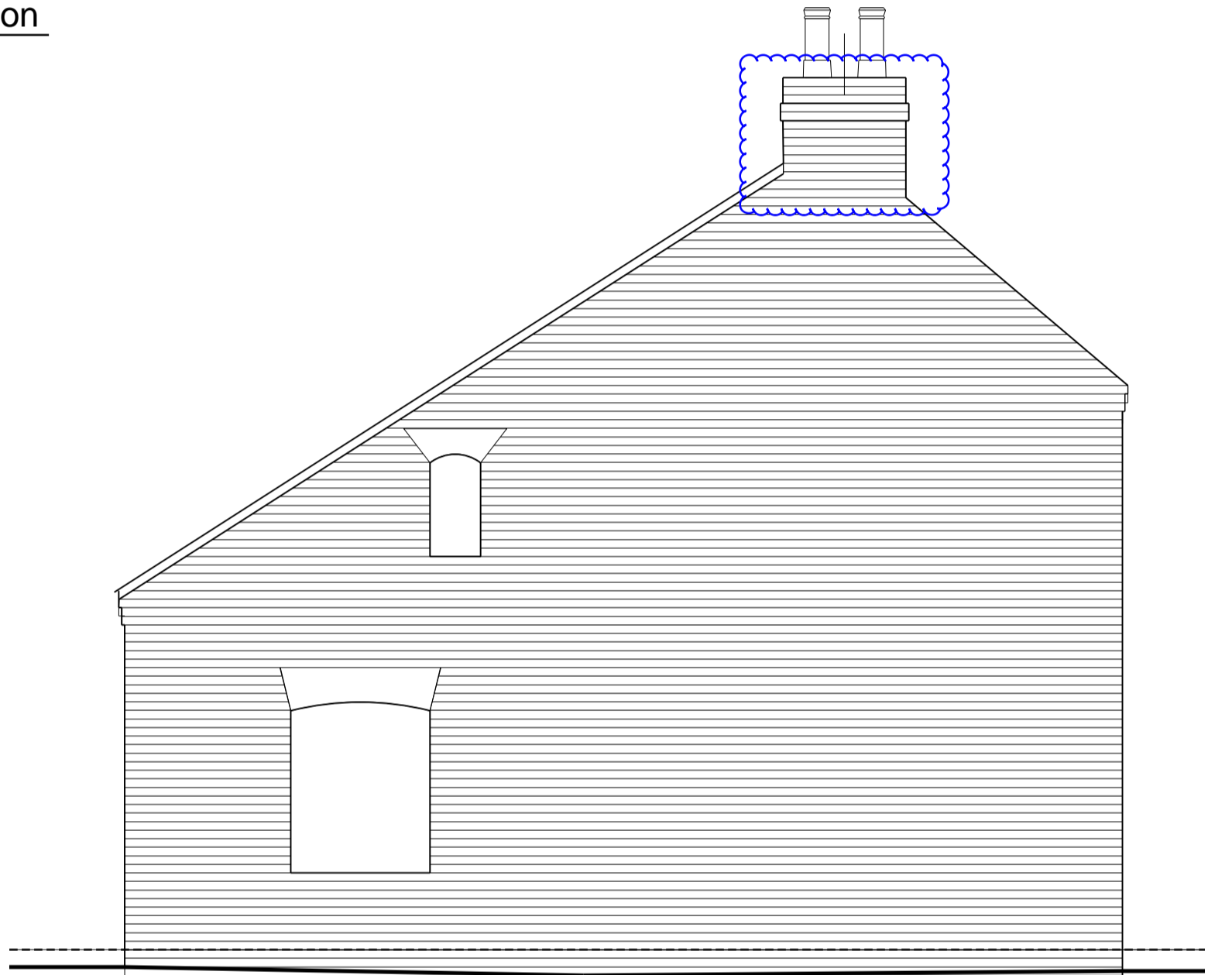


5 North West Elevation
Scale: 1:50

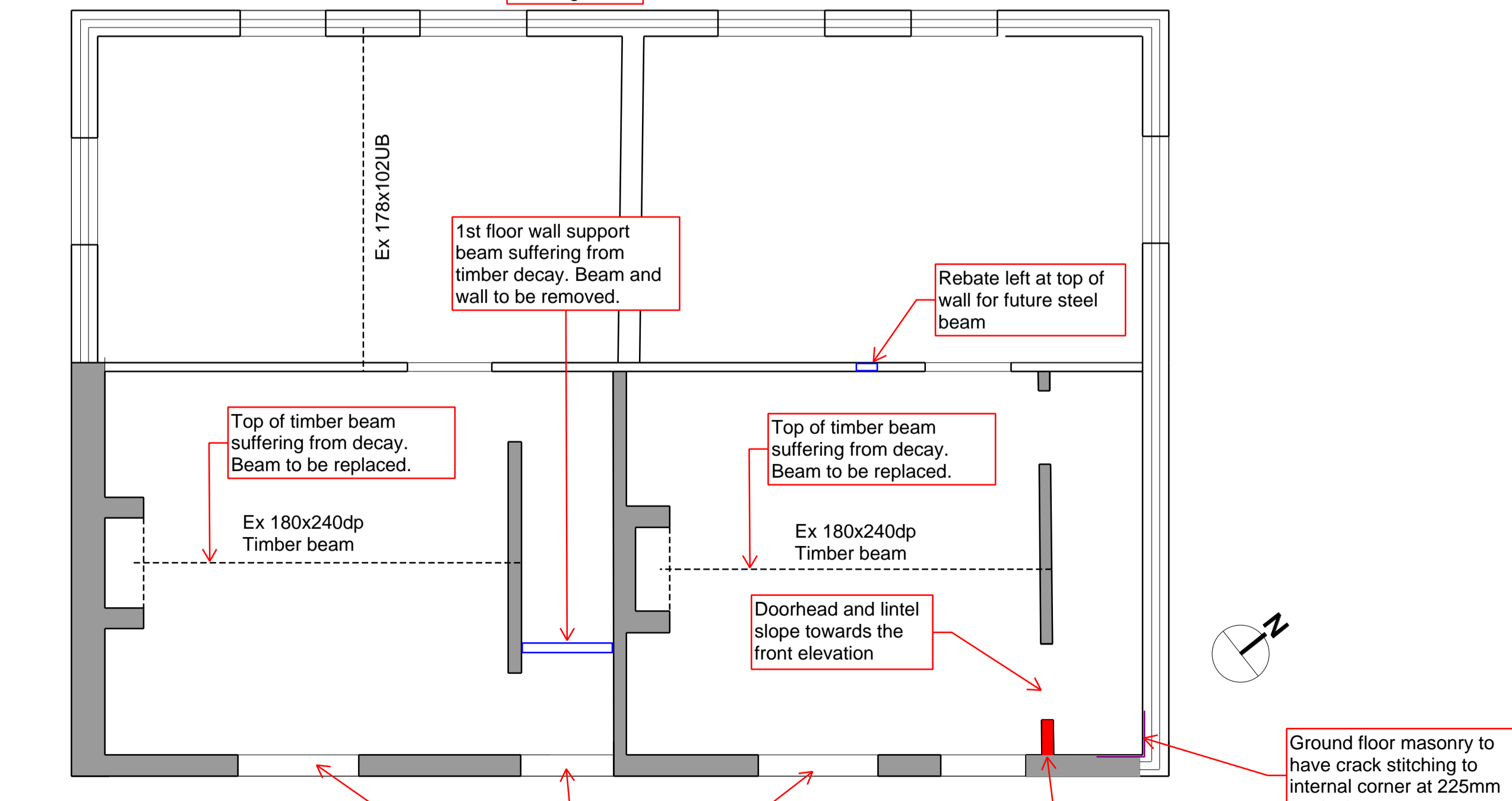


3 South East Elevation
Scale: 1:50

Re-build masonry panels or install crack stitching





6 South West Elevation
Scale: 1:50



2 Existing Plan
Scale: 1:50

Install new steel lintels

Pier settlement by 150mm

 Denotes Areas of re-pointing and making good existing masonry
 Denotes Areas of masonry to be re-built

REV DATE DESCRIPTION BY

GRACE MACHIN
PLANNING & PROPERTY

CLIENT
Joanne Bradley

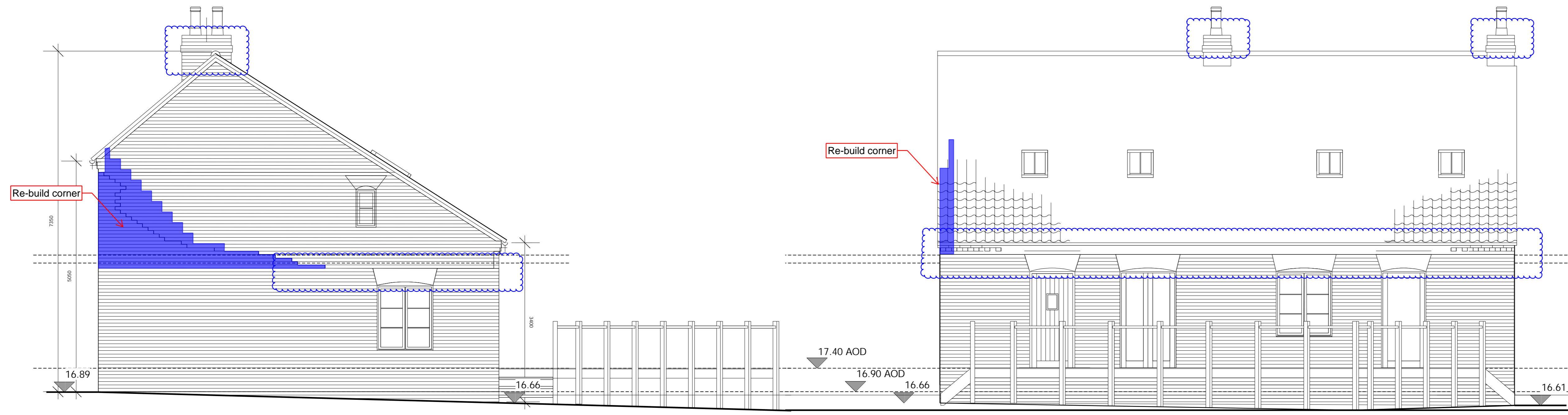
PROJECT
5 Bradleys Lane, Hoveringham,
Nottingham NG14 7JG

DRAWING
Existing Plans and Elevations

PROJECT NUMBER 0135	SCALE @A1 1:50	DATE Nov 23	BY CH
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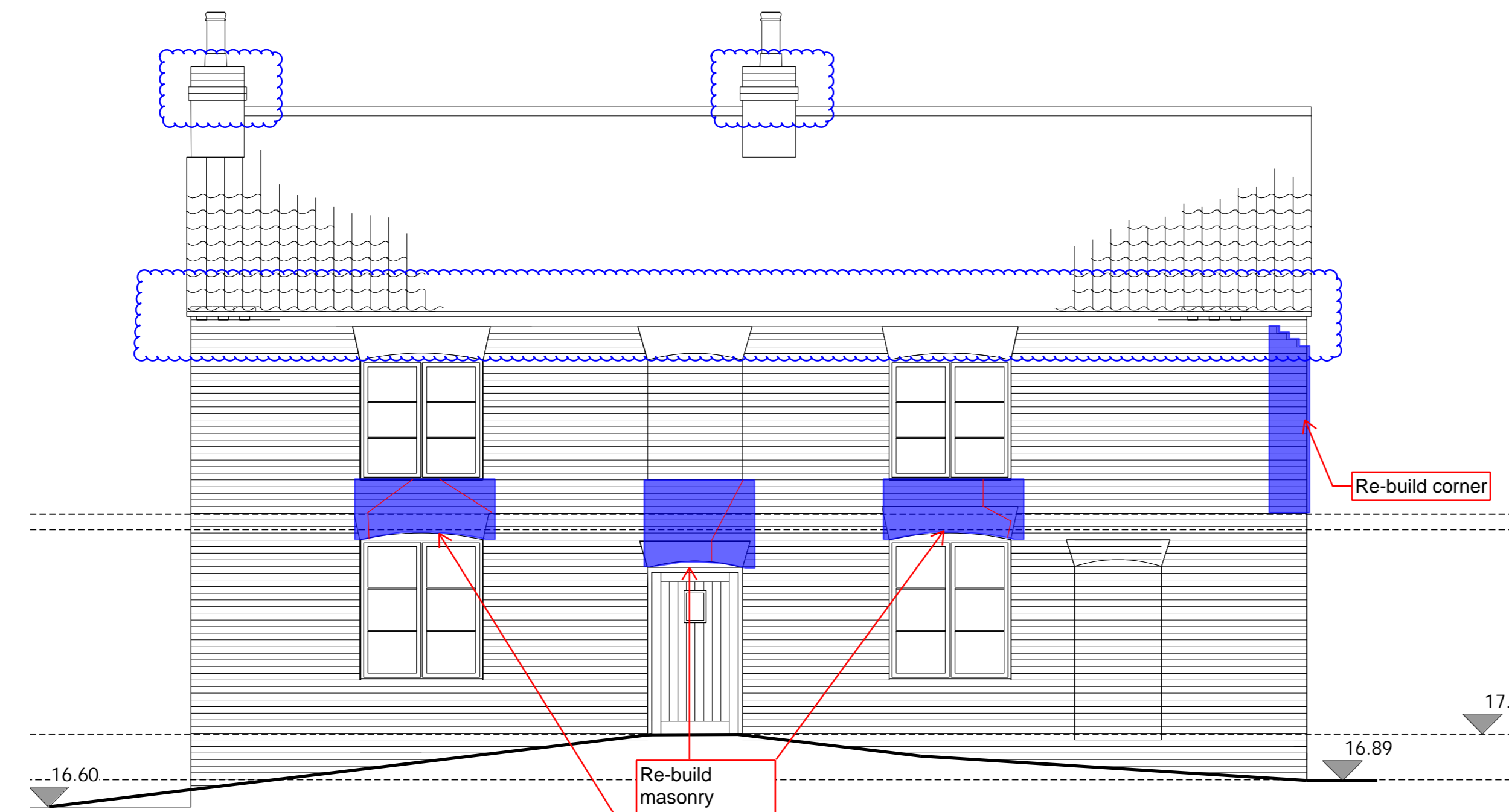
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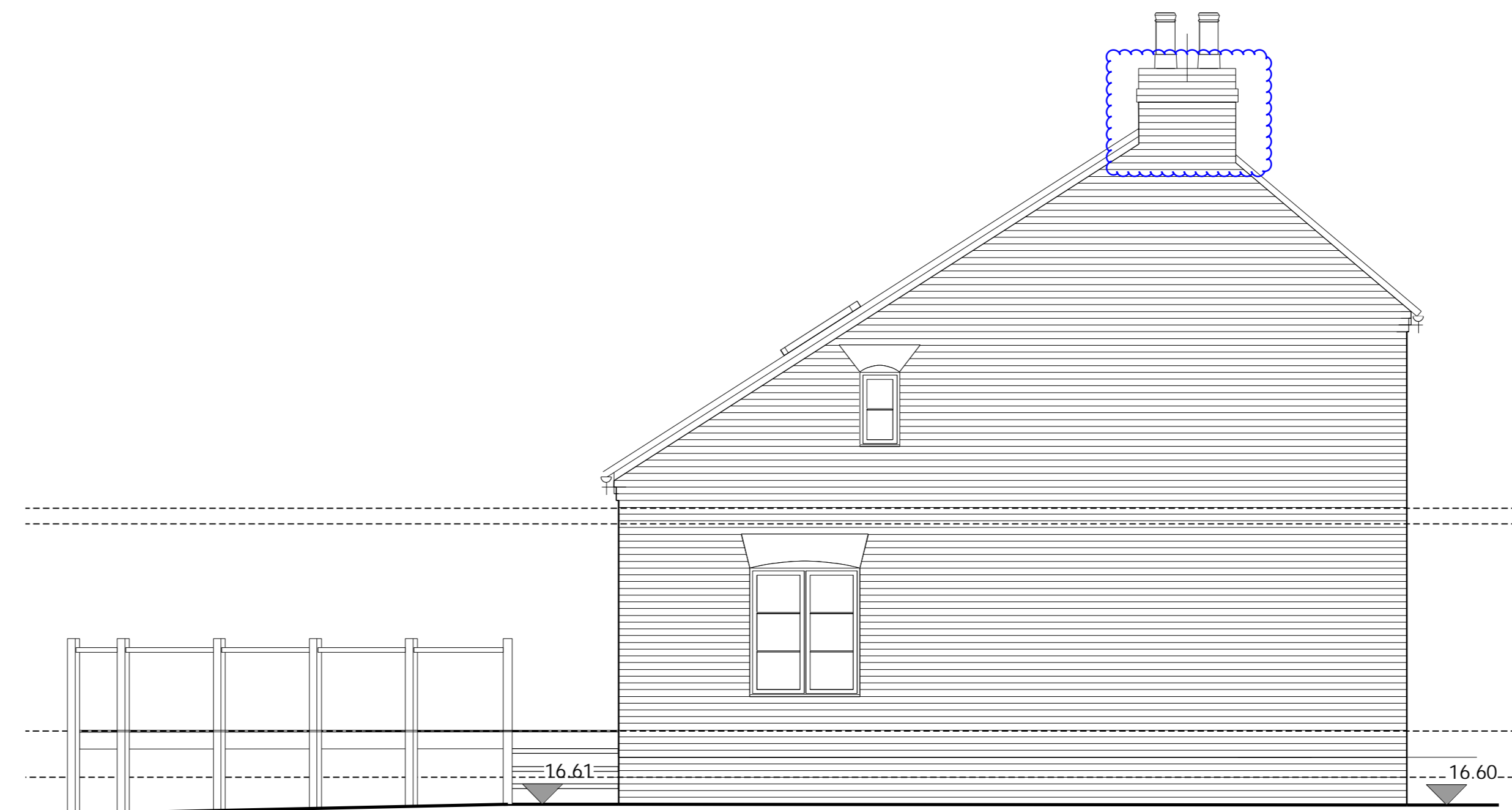


3 North East Elevation
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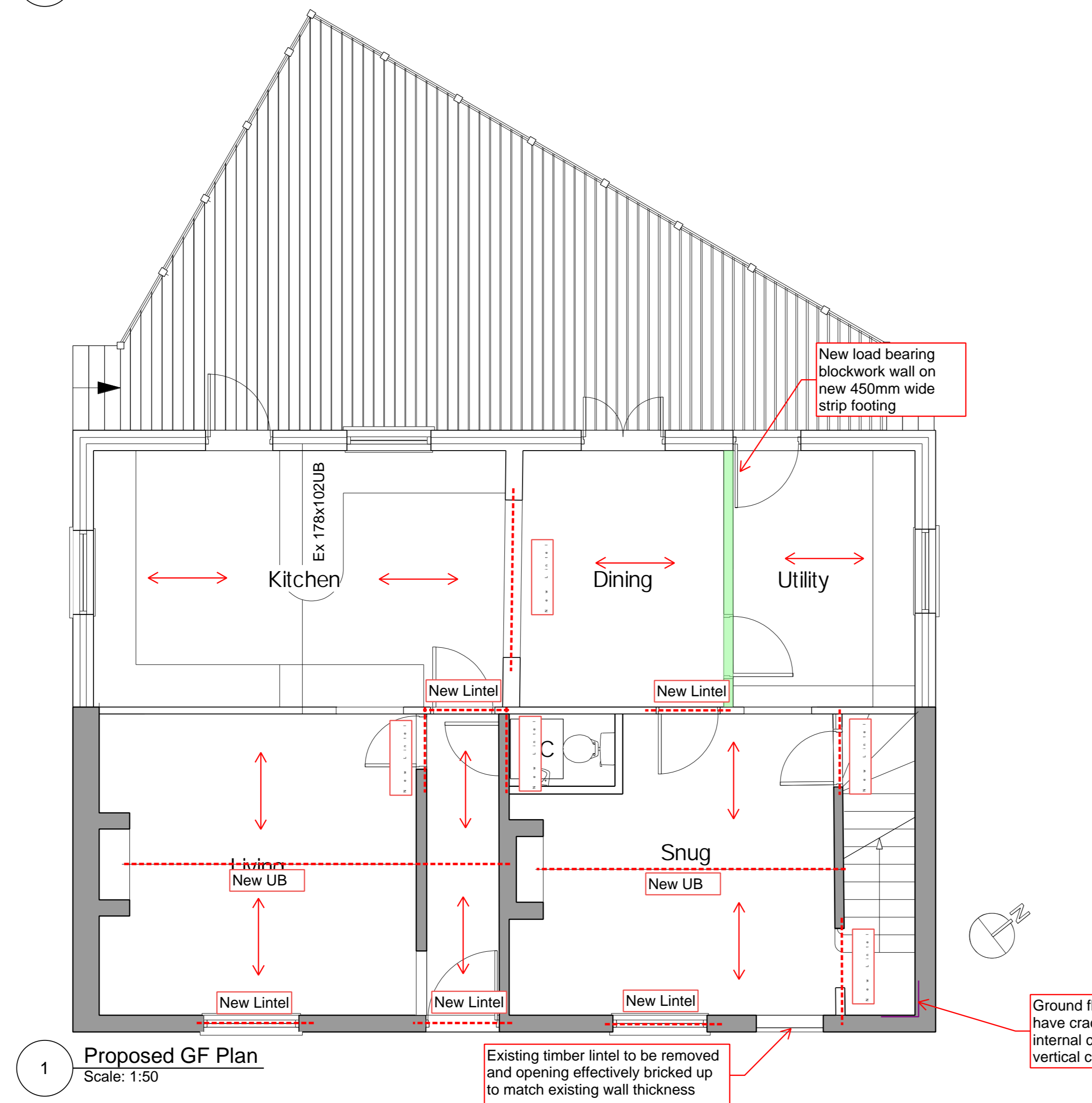
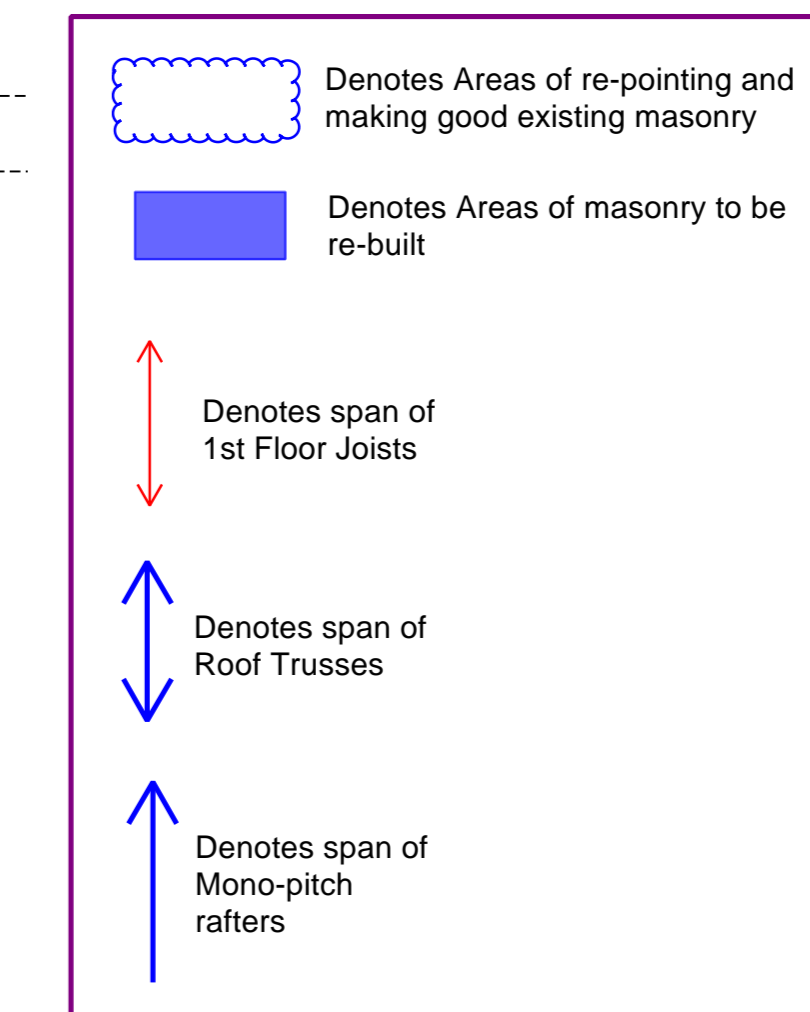
4 North West Elevation
Scale: 1:50



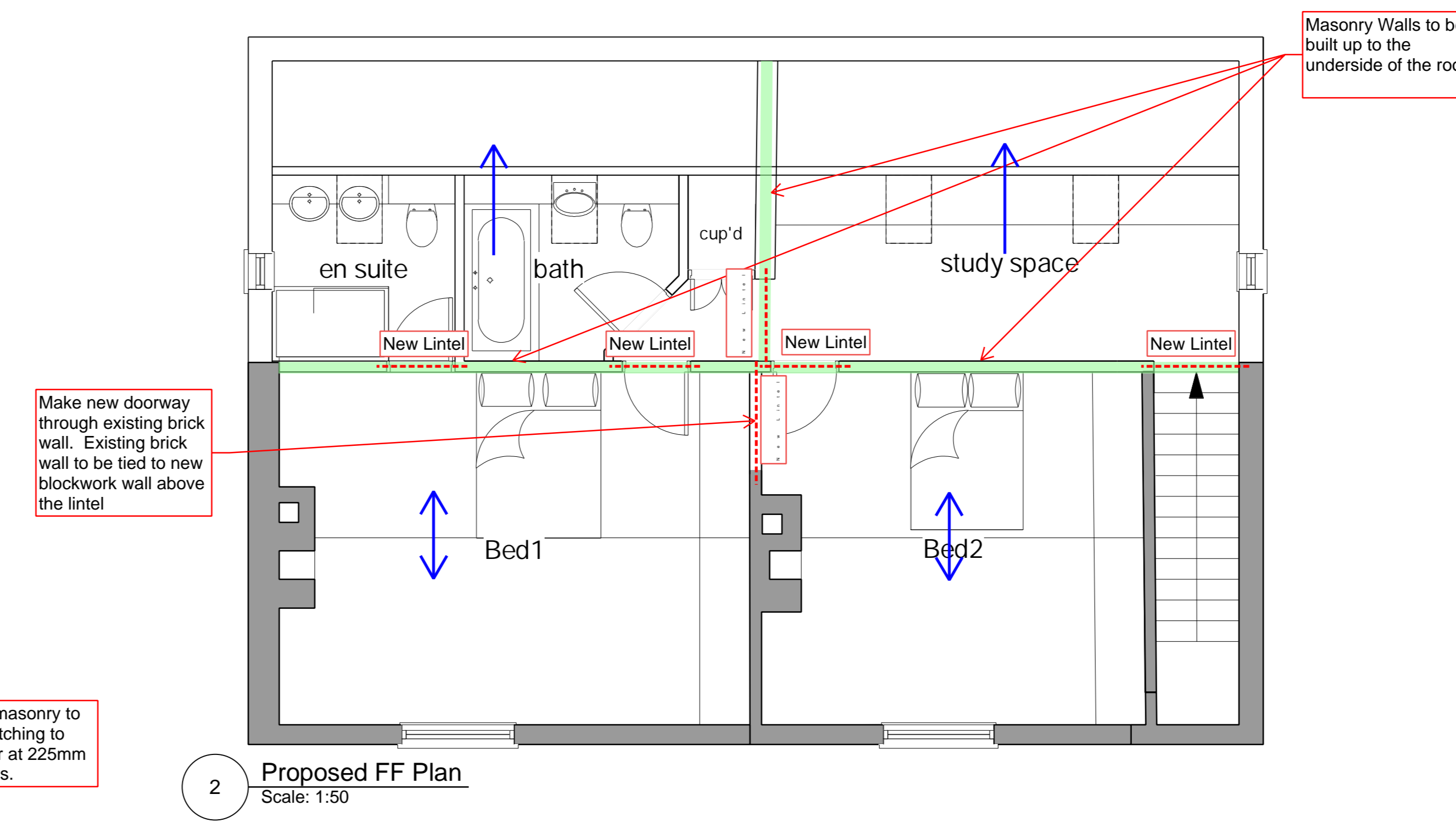
5 South East Elevation
Scale: 1:50



6 South West Elevation
Scale: 1:50



1 Proposed GF Plan
Scale: 1:50



2 Proposed FF Plan
Scale: 1:50

A 100124 Sheet size increased to A0 to include Elevations at 1:50 as requested
REV DATE DESCRIPTION BY

GRACE MACHIN
PLANNING & PROPERTY

CLIENT
Joanne Bradley

PROJECT
5 Bradleys Lane, Hoveringham,
Nottingham NG14 7JG

DRAWING
Proposed Plans and Elevations 1:50

PROJECT NUMBER	SCALE #A0	DATE	BY
0135	1:50	Jan'24	CH

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