STRUCTURAL ENGINEER

Structural details and calculations shall all be in accordance with details and calculations prepared by Edwards Fordham and Leslie, Chartered Engineers 4 School Lane, Liss, Hampshire, GU33 7EB Tel: 01730 892494.
Job Ref: C/13052, Calculations/detail sheet numbers 1 thru 6 and details may be cross referenced to drawing numbers 13:91/03, 04, 05 and 06 on which relevant details are shown

GENERAL NOTES

It has been assumed that that the floor joists over the living room span side to side . The General Contractor is to check the span, direction and length of these joists. The Contractor should also confirm the roof construction directly over this area and confirm all to the architect before works proceed as Beams D and F may require a design recheck for amended loadings.

Movement joints in the external work are to be in accordance with the block/brickwork supplier's specification and Render Association requirements. Movement joints are to also be provided between brick and blockwork construction.

The General Contractor is to check that the stud partition between the Kitchen and the Living Room *is not load bearing. Do not* remove this partition if it is found that it supports the first floor or walling over. The Contractor is to confirm that all the floor joists span from side to side (North to South) throughout and to advise the Architectural Technician of construction before any work is carried out

The General Contractor is responsible for the safety of the building at all times. He should prepare a method statement for the proposed alteration work including propping of the structure required during the works and issue to Building Control for their approval

IF IN DOUBT ASK

LINTELS
WINDOWS
W1 Beam C - HD/K-90 Keystone lintel
W2 Beam B – 178 x 102 UB placed on inner toe of S/K-90 Keystone lintel. Beam and lintel to have 150mm min. end bearings.
W3 SK-90 Keystone lintel
W4 2 No. 50mm x 200mm timbers bolted together (dormer)
DOORS
D1 Beam E1 - Box/K – 100 Keystone lintel (note adjacent Beam E)
D2 Studwork
D3 Box/K – Keystone lintel
D4 Beam L – HD/K - 90 Keystone Lintel

STRUCTURAL ENGINEER continued

SINGLE STOREY REAR EXTENSION
Beam A (on 'Y' – 'Y' axis)
2 No. 178 x 102 UB located central under each leaf of cavity wall over. Beams to be bolted together with M16 dia. bolts at 600 ctrs. Provide 330 x 330 'L' shaped on plan x 3 courses high of fully bonded engineering brickwork to each end as padstones. Allow if required for 50 x 100 timber wall plate bolted to top flange with M10 dia. bolts at 400 ctrs of inner beam that supports the roof of the main two storey section.
Beam B (above window W2)
178 x 102 UB placed on inner toe of S/K-90 Keystone lintel. Beam and lintel to have 150 min. end bearings.
Beam C (above Window W1)
HD/K – 90 Keystone lintel
Beam H (structural ridge)
203 x 133 UB30. Bolt 50 x 125 timber plate to top flange with M10 dia. bolts at 400 ctrs. Provide 330 x 100w x 150 high concrete padstones to each end.
Rafters 47 x 150 - C24 grade at 400mm ctrs. to be birdmouthed over eaves and ridge timber plates. Connect rafters to these wall plates with truss clips or similar approved.

Bi-fold doors to be bottom supported and not top hung.

GROUND FLOOR ALTERATION WORKS & GARAGE
Beam D
2 No. 203 x 102 UB located central under each leaf of cavity wall over. Beams bolted together with M16 dia. bolts at 600 ctrs. Provide 330 long x O/A width of cavity wall x 215 high concrete padstones at each end.
Refer to earlier GENERAL NOTE regarding existing house construction.
Beam E (adjacent to Door D1)
203 X 102 UB Provide 225 long x 100 x 150 high concrete padstones to each end.
Beam E1 (above Door D1)
Box/K – 100 Keystone lintel
BEAM L (above Garage door)
HD/K – 90 Keystone lintel

STRUCTURAL ENGINEER continued

MAIN TWO STOREY EXTENSION FIRST FLOOR
BEAM F (above new opening between existing house and Bedroom No. 1)
2 No. 152 x 89 UB located central under each leaf of cavity wall over. Beams to be bolted together with 2 No. M16 dia. bolts equally spaced.

First floor joists
47mm x 195mm – C24 grade s.w. joists at 400mm ctrs - decreased to 300mm ctrs. beneath Dormer and with treble 47mm x 195mm - C24 joists beneath studwork partitions (running parallel) **all supported on galvanised m.s restraint hangers.** All multiple joists to be bolted together with M12 dia. Bolts at 400mm ctrs.
Floor boarding to be continuous throughout including under partitions and within roof spaces

Purlins (to main high level roof)
203 x 102 UB. Bolt 50 x 100 timber plate to top flange with M10 dia. bolts at 400 ctrs. Bolt in full depth and width timbers to both sides of web with M10 dia. bolts at 400 ctrs. Provide 330 long x 100wide x 150 high concrete padstones to each end.

Rafters (to main high level roof)
47 X 170 - C24 grade at 400 ctrs. To be birdmouthed over the purlin and ground floor eaves *wall plates. All rafter* feet are to be connected back to the floor joists using M30 x 2.5 restraint straps fully fixed to the rafters and taken back over a minimum of 3 no. floor joists . Provide full depth noggins fixed to floor joists and located directly under all straps. Straps to be also fixed to all noggins.

Main High Roof - Ceiling Joists/Collars
47 x 150 – C24 grade at 400 ctrs. All to be bolted to rafters with M10 dia. bolts with double sided tooth plate connectors, located central in all timbers. These joists are to be also hung and supported from the purlins using approved timber to timber connectors.

Dormer - Ceiling Joists/Collars 38 x 122 – C16 grade at 400 ctrs. All to be bolted to rafters with M10 bolts with double sided tooth plate connectors located central to all timbers.

STRUCTURAL ENGINEER Continued

REMOVAL OF KITCHEN/DINING ROOM CHIMNEY BREAST

BEAM G1 (Existing construction)
Steelwork supplier to design connection to Beam G2 for 25KN unfactored

BEAM G2
203 x 133 UB 30 located central under wall over.

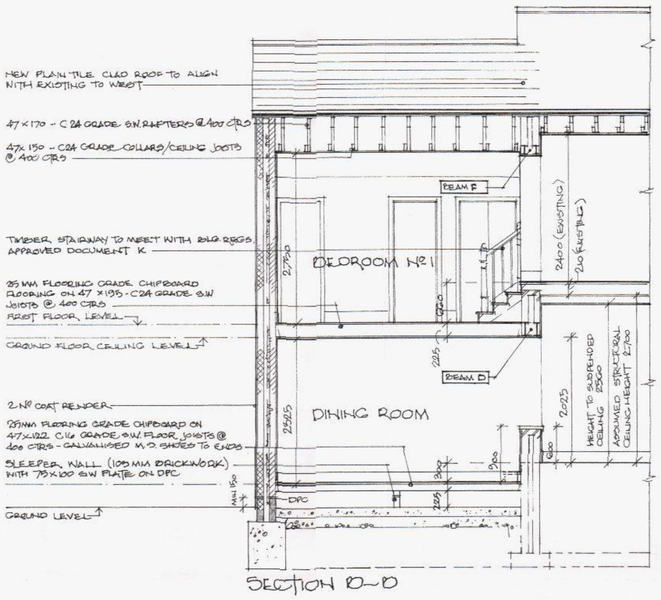
BEAM G3
203 x 133 UB 25 located central under front (east) brick face of chimney.

Provide 10mm thick top plate, size to suit chimney flues over and located on top of Beams G2 and G3 to seal flues and brickwork over

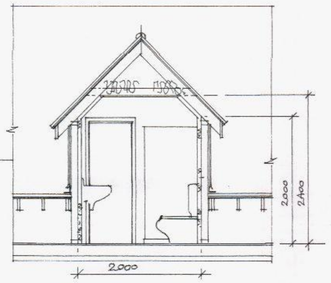
Beams G2 and G3 are to be bolted together with M16 bolts at 600mm ctrs with spacer tubes as necessary.
Padstones at external wall (Wall S) to be 710 long x 100mm wide x 3 courses high of fully bonded engineering brickwork central under beams.

PIER 'X' Rebuilt chimney breast.
To be built with 27.5N/mm2 fully bonded brickwork with top three courses in fully bonded engineering brickwork. All brickwork to be bonded into wall 'P'
Existing chimney foundation to be exposed for approval by Building Control that foundation is adequate *to carry revised loading.*

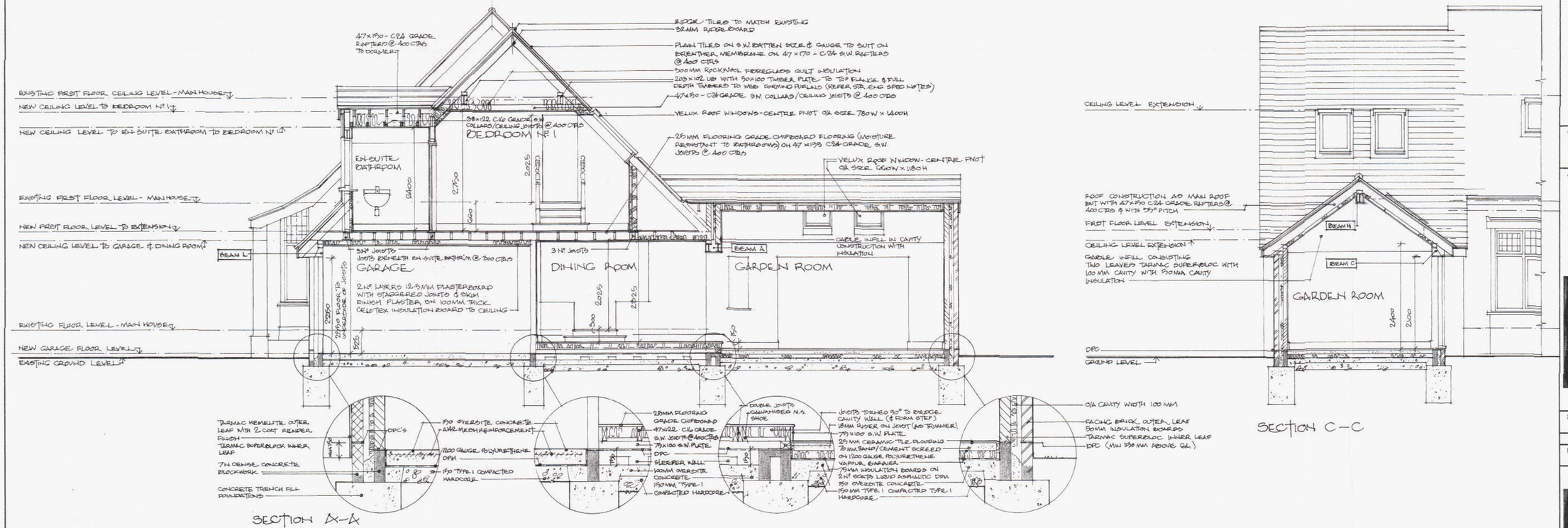
FOUNDATION TO POSTS
Form 1000 x 1000 x 600 thick minimum foundation located centrally under posts. Formation level e.g. depth to the approval of Building Control.
Wall S
General Contractor to check strength of inner leaf of cavity wall brick/blockwork . Minimum strength requirement 7.0N/mm2. If required rebuild the inner leaf of this wall with fully bonded 7.0N/mm2 blockwork.



SECTION B–B



SECTION D–D



SECTION A–A

SECTION C–C

AMENDMENTS
6 FEBRUARY 2014
STRUCTURAL SPEC. ALTERED TO ACCORD WITH REVISED BEAM G2 & G3

A		
	Date	Revisions

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HAVANT BOROUGH COUNCIL
17 FEB 2014
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Client
MR P & MRS S CLEMENTS

Job Title
PROPOSED EXTENSION & ALTERATIONS TO 25 CHICHESTER AVENUE HAYLING ISLAND HAMPSHIRE

Drawing Title
SECTIONAL DETAILS & ROOF

Scale
1 – 50 : ENCIRCLED DETAILS 1 – 20

Date
NOVEMBER 2013

Drawn by

Drg. No.
13:91/05 A

Rev.

REPROPOINT 2409

594 x 841mm A1