

# Cameron + Ross

## Construction Notes and Details. (rev 0 : 28/01/2020)

### 190282 - Plot 2, MacDuff Industrial Estate

#### Notes

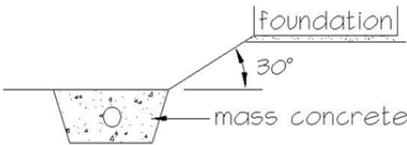
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To be read in conjunction with.

Drg 190282-01	Foundation and Ground Floor Plans
Drg 190282-02	Roof Plan.
Drg 190282-03	Elevations and Section.

## Foundations.

- a) All concrete to be in accordance with C+R's concrete specification.
- b) All foundation concrete to be Foundation Concrete..
- c) 50mm mass blinding concrete, GEN 1 (C8/10), to be placed under all foundations unless foundation concrete is placed immediately after excavations.
- d) Foundations have been designed to impose a maximum bearing pressure of 150kN/m<sup>2</sup> on the bearing strata of firm sandy clay (this strata was encountered in the soil investigation at a depth of 600mm below existing ground level. Where it is found necessary to excavate further to reach the bearing strata or a soft spot is encountered, the foundations are to be stepped down to the bearing strata. Alternatively the difference in levels is to be made up with mass concrete grade GEN 1 (C8/10) (on no account is fill material to be introduced to make up the level difference or to reduce under building depths).
- e) It should further be ensured that the levels to the underside of the foundations are formed at a minimum depth of 450mm below proposed finished ground level to ensure adequate frost cover is achieved. Additional care should be taken where it is intended to reduce the original ground level to ensure this depth is achieved.
- f) The SER Design Certificate is issued on the basis that the foundations are formed on the strata described above. Where ground conditions encountered vary from these described above the certifying engineer is to be contacted for further instructions.
- g) Mass Concrete Backfill: It is essential to check that all ground within a 30° line extending down and away from all foundations is undisturbed or when disturbed is removed entirely and backfilled with mass concrete. Detail A shows a typical method of complying with this requirement which should be checked for all future works in addition to existing works. Alternatively, a lower formation level to the foundation may be achieved by upfilling with GEN 1 (C8/10) mass concrete. In either case the lower formation should be excavated and backfilled before the higher.

The diagram, labeled 'Detail A', shows a cross-section of a foundation. The foundation is a rectangular block on the right. To its left, a trapezoidal area is filled with 'mass concrete', indicated by a stippled pattern. A line from the top-left corner of the foundation extends downwards and to the left at a 30-degree angle, defining the boundary of the backfill zone. The ground level is shown as a horizontal line above the foundation. Labels include 'Foundation' pointing to the concrete block, '30°' indicating the angle, and 'mass concrete' pointing to the stippled area. The caption 'Detail A' is centered below the diagram.
- h) Bottoms of all foundations are subject to the approval of the Local Authority who should be contacted to enable them to carry out an inspection prior to concrete being placed.
- i) Due cognisance should be taken of the proximity of tree's adjacent to foundations and foundations depths deepened where required in accordance with NHBC Standards, Chapter 4.2 Appendix A.

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## **Under building**

- a) Under building to be 7N blockwork with a minimum density of 1500kg/m<sup>3</sup> and built in 1-3 to 4 (M6) cement-sand mortar all in accordance with C+R's masonry specification.
- b) Cavities in external walls to be filled to a level 75mm below finished external ground level with weep holes formed at a maximum 1 metre centres in the outer leaf.
- c) All walls and columns to be positioned centrally on foundation, except where shown otherwise.

## **Concrete ground floor slab.**

- a) Slab to be 100mm thick grade RC35 (28/35) concrete reinforced with I layer of A142 with a minimum of 50mm bottom cover.
- b) Slab to sit upon 150mm (minimum), 600mm (maximum where slabs are not supported at the edges) D.O.T. type 1 hardcore, consolidated in layers not exceeding 225mm thick.
- c) Floor to be placed in panels not exceeding 60m<sup>2</sup> and which are to be as square as possible. Contractor to provide proposed pour sequence to the engineer for approval, prior to placement.

## **Radon gas measures.**

- a) Based on the 'Indicative Atlas of Radon in Scotland'; Provide 1200 gauge polyethylene membrane with lapped and sealed joints, laid to seal cavity, all as per the recommendations from the BRE publication BR 211.

## **Supplementary Steelwork**

- a) Fabrication is to be carried out in accordance with BS EN 1090-2, Execution Class 2 (EXC2).
- a) All steelwork except hot rolled hollow sections to be of minimum grade S275 in accordance with B.S. EN 10025.
- b) All hollow sections to be hot rolled and be of grade S275J2H steel in accordance with B.S. EN 10210.
- c) All black bolts to be ISO metric black hexagonal bolts to B.S. 4190 grade 8.8 unless otherwise shown.
- d) All welding to be carried out in accordance with B.S. 5135.
- e) Painting.
  - a. Following fabrication, the steelwork shall be blast cleaned to B.S. 7079 second quality.

- b. Immediately after cleaning the steelwork, it shall be protected with one coat of zinc phosphate modified alkyd high build primer to a dry film thickness of 75 microns.
  - c. Steelwork built into external walls shall receive two site applied coats of high build bitumen to 100 microns thickness, to concealed faces.
  - d. Following erection of the steelwork, any damaged paintwork shall be made good.
  - e. For finishing coats to exposed steelwork refer to architect's drawings. Contractor to ensure decorative paints are compatible with the primer coat.
- f) Galvanising.
- a. Galvanising (minimum thickness of 80microns) to be in accordance with B.S. EN ISO 1461 for subsequent finishing coats refer to architect's drawings.
  - b. All closed sections to be adequately vented prior to galvanising and must be subsequently sealed. Where these vent holes are exposed in the finished works. The architect must be advised and is to approve the method of sealing.
  - c. All welds to be continuous 6mm fillet welds unless noted otherwise. Where overlapping plates are welded prior to galvanising, welding is to be carried out on a hit and miss basis, weld seams arranged symmetrically.
  - d. Prior to fabrication advice of the galvaniser is to be sought in respect of the proposed dipping procedure and potential distortion.
  - e. All galvanised components are to conform to the fabrication and erection tolerances as specified in B.S. 5950 Part 2.
- g) Fabricator is to ensure the steelwork should either be protected during site storage and erection, or given a suitable primer coat. The dry film thickness should be appropriate for the expected storage time and severity of the storage environment. If in doubt, please ask.
- h) Washers to be provided under all nuts including those at purlins and sheeting rails.
- i) Exact lengths of new steelwork shall be determined by the contractor.
- j) Contractor to agree erection sequence with Principal Contractor and must ensure the work is securely bolted and, if necessary, shall provide temporary bracing or other members to cater for all erection stresses and conditions including those due to erection equipment and its operation.
- k) For fire protection to steelwork refer to architect's drawings.
- l) Steel members to be fabricated with lifting hooks/eyes to allow members to be lifted on-site. Position of hooks/eyes to take into account the lifted member's centre of gravity. Steel members to roof to be provided with hooks to support roof safety nets.

## **Temporary Stability**

- a) Ensure all walls are accurately aligned, temporarily braced and stable. Temporary bracing on the walls should remain in place until the roof is wind-braced. Temporary bracing that provides racking resistance should not be removed until the wall lining is installed.

## **Masonry Specification**

- a) All masonry construction to be in accordance with BS5628 and BS8000.
- b) Wall ties to cavity walls to be in accordance with BS5628-3 and BSEN 845-1 at a maximum of 900mm ctrs horizontally and 450mm ctrs vertically, or 2.5/m<sup>2</sup> unless noted otherwise.
- c) 7N blocks refer to dense concrete blocks with a minimum compressive strength of 7N/mm<sup>2</sup>.
- d) The design of masonry has assumed special manufacturing control in accordance with Tables 4a) and b) of BS5628: part 1 and it should be ensured that all brick and blocks used meet this requirement.
- e) 140mm thick blocks to be constructed using lightweight block with a minimum crushing strength of 7N/mm<sup>2</sup> or with dense concrete shortened blocks, (ie. 325mm long). No unit to weigh more than 20kg.

## **Concrete Specification**

- a) All concrete construction to be in accordance with BS8110, BS8500 and BS EN 206.
- b) Designated concrete mix specification in accordance with BS EN 206: Part 1: 2004, Tables A.13 & A.14.
- c) No concrete pour should occur unless the temperature is 3°C and rising. Should low temperatures be expected following a pour, the contractor must take all necessary measure to protect the concrete.
- d) Concrete cube tests should be taken to check compliance of the mix with the design specification. At least one "sample", should be taken for each type of concrete mix on the day it is placed, prepared to the requirements of BS1881, or as agreed with C+R.
- e) Reinforcing bars to concrete to be in accordance with BS4449, and reinforcing mesh to be in accordance with BS4483.
- f) Unless noted otherwise, all reinforcement should be "H" high yield deformed bars with a minimum tensile strength of 500N/mm<sup>2</sup>.
- g) No admixtures are permitted without the prior agreement of C+R.

## **Timber Specification**

- a) All timber to be in accordance with BS5628, and a minimum grade of C16, unless noted otherwise.

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- b) Moisture content of all timber should be 18% or less.
- c) All structural timber should be pressure impregnated with preservative in accordance with BS5628-5, table 4.
- d) Special attention should be paid to ensure that the cut surfaces of all timber are suitably protected with preservative as required.

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## Factory Nailing Schedule.

### Internal Panels.

Component from.	to.	Nail Size (mm)	Type	Qty.	Spacing
Rails	Stud	88 x 3.1	Screw Galv Strip	2 *	Each end
Stud	Dwang	88 x 3.1	Screw Galv Strip	2 *	Each end
Lintel	Lintel	75 x 2.8	Ring Galv Strip	2	300 crs both faces
Stud	Stud	75 x 2.8	Ring Galv Strip	1	300 crs both faces
Stud	Lintel	88 x 3.1	Screw Galv Strip	4	Each end
Top Rail	Lintel	88 x 3.1	Screw Galv Strip	2 *	See Panel Summary Sheet
Transome	Stud	88 x 3.1	Screw Galv Strip	2 *	
OSB (if reqd)	All	50 x 2.8	Paper/Plastic Galv	1	75 crs perimeter of sheet
			Collated	1	150mm intermediate studs

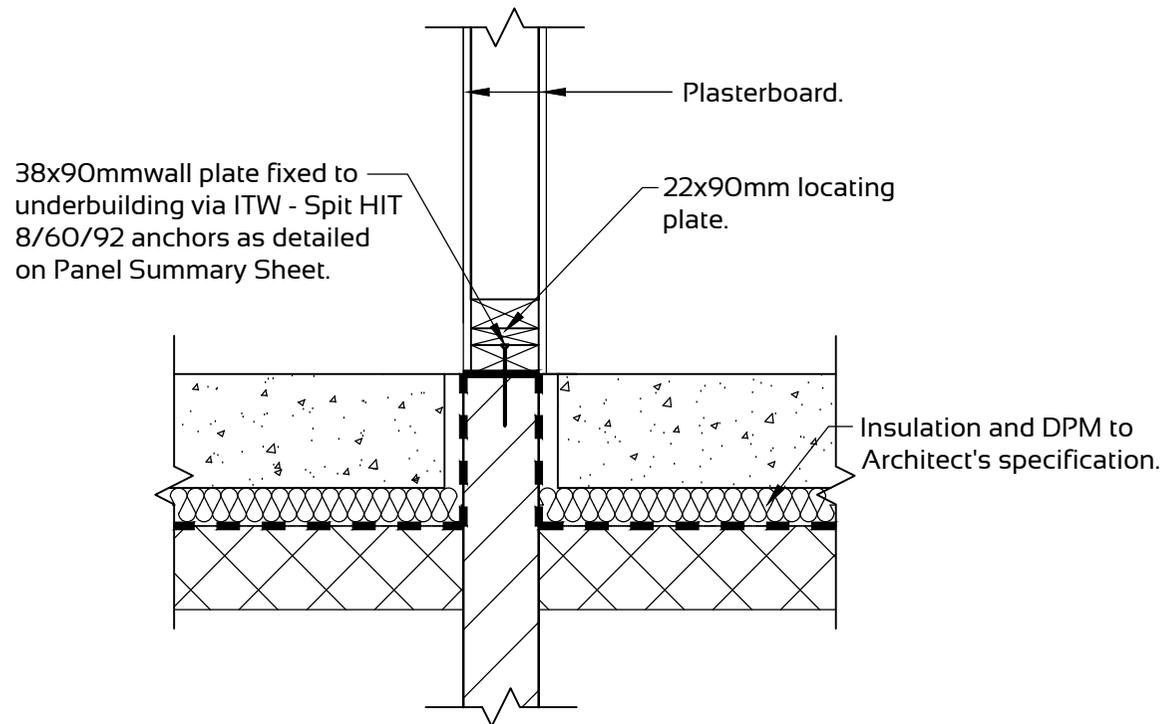
\* Denotes 3 nails to be provided for panels over 2400mm high.

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## Site Nailing Schedule.

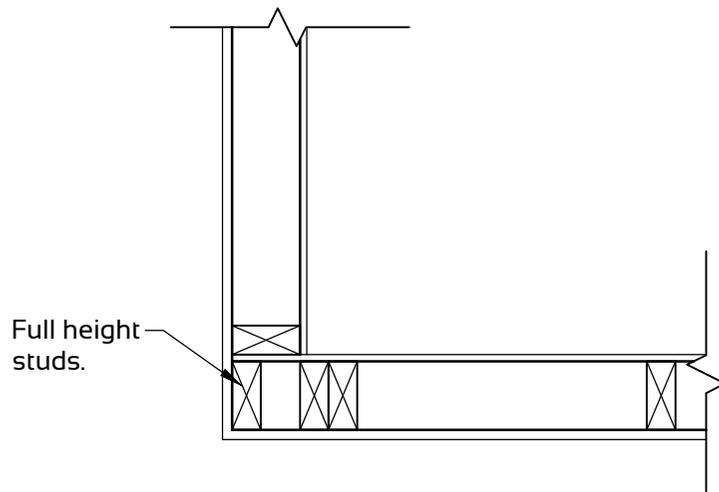
<u>Construction detail</u>		<u>Nail size (mm)</u>	<u>No. and/or spacing</u>
<u>(NOTE - All nails to be galvanised steel unless noted otherwise below)</u>			
<u>Foundation</u>			
1	25/38mm wallplate to underbuilding	-	Spit HIT 8-60/90 @ crs as specified on 'kit summary sheet'.
2	Holding down straps as shown on plan.	-	50x2.65 @ 6No. per strap
<u>Wall framing</u>			
1	Cill plates to ring beam/joist	-	65x3.75 or 75x3.1 Paslode @ crs as specified on 'kit summary sheet'.
2	Bottom rail of panel to cill plate	-	100x4.5 or 90x3.1 Paslode @ crs as specified on 'kit summary sheet'.
3	Stud to stud	either	75x3.75 @ 400mm crs – face nailed each face
		or	75x3.1 Paslode @ 300mm crs – face nailed each face
4	Stud to corner post	either	100x4.5 @ 400mm crs – face nailed
		or	90x3.1 Paslode @ 200mm crs – face nailed
5	Head binder to top rail of panel	-	75x3.75 or 90x3.1 Paslode @ crs as specified on 'kit summary sheet'.
6	Fire stops to panels	-	100x4.5 or 90x3.1 Paslode @ 600mm crs – face nailed
7	Cavity closers to panels	-	100x4.5 or 90x 3.1 Paslode @ 600mm crs – face nailed
8	Door frames/windows to cavity closers	-	65x4.5 or 63x2.8 Paslode @ 450mm crs – face nailed
9	Frame ties (blockwork to timber frame)	-	50x3.00 stainless - as specified on 'kit summary sheet'.
10	All dwangs or noggins	either	100x4.5 - face nailed – 2No. each
		or	45x3.75 or 75x3.1 Paslode - skew nailed – 4No. each
11	Two storey – gable strap across floor zone	-	75x3.75 - 3No. each end of strap, 2No. to header joists
12	One & half storey – gable restraint straps	-	75x3.75 - 4No. to gable panel, 2No. to each joist/truss
13	Plasterboard to studs.	-	2.65 plasterboard nails - 150mm centres around the perimeter of the sheet and 300mm internally.
<u>Internal works</u>			
1	Partitions to floor joists or floor dwangs	-	75x3.75 or 75x3.1 Paslode @ crs as specified on 'kit summary sheet'.
2	Partitions to trusses or ceiling dwangs	-	75x3.75 or 75x3.1 Paslode @ crs as specified on 'kit summary sheet'.
3	Dwangs or noggins	either	100x4.5 or 90x3.1 Paslode - 2No. each end face nailed
		or	75x3.75 or 75x3.1 Paslode - 2No. each end skew nailed
4	Partition to Partition	-	75x3.75 or 75x3.1 Paslode @ 600mm crs each side, face nailed
5	Partition to External Wall Panels	-	75x3.75 or 75x3.1 Paslode - 1No top and bottom and 1No through site fixed dwang at mid height.





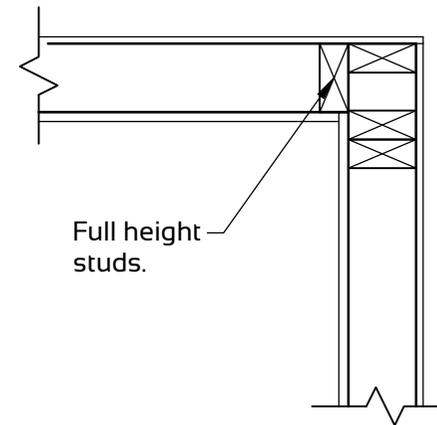
## Load Bearing Partition Detail

(Scale 1:10)



## Internal Corner

(Scale 1:10)



## External Corner

(Scale 1:10)

### NOTE.

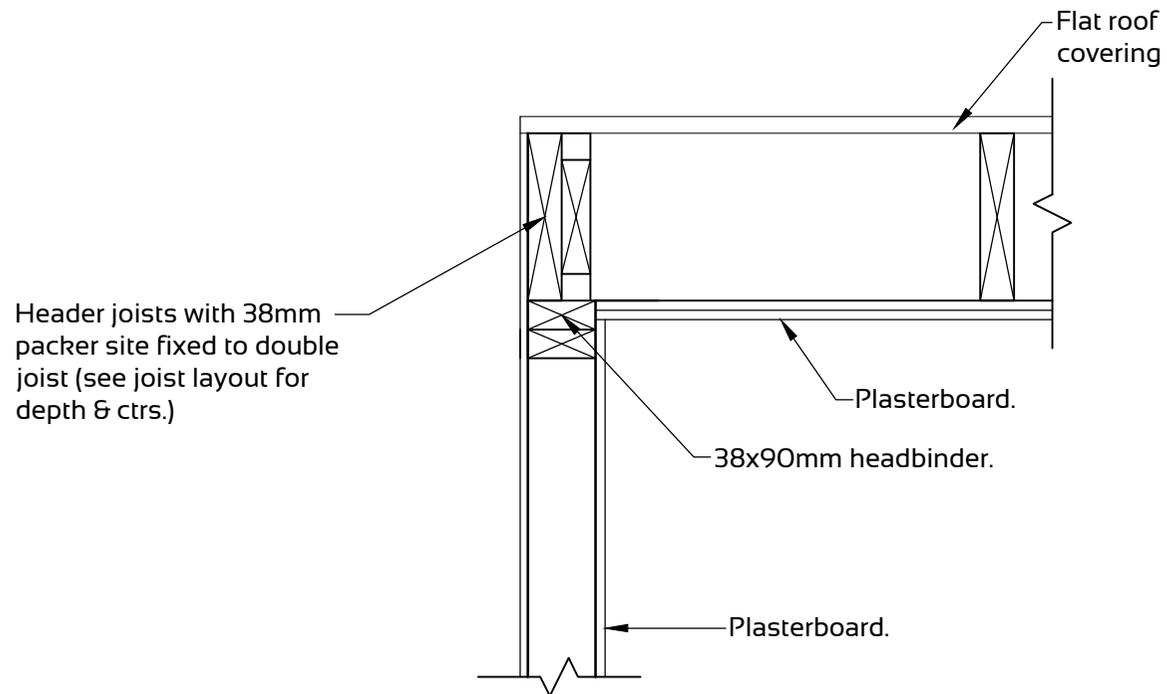
External wall construction to be 12.5mm duplex plasterboard on 38/46 x 90mm studs @ 600mm ctrs. (with 38x90mm rails.) 90mm glass wool insulation between studs, 9mm OSB/Ply cladding to cavity side of panel, breather paper to outside of cladding.

### NOTE.

Firestops (38x50mm) to extend down to touch cavity fill at ground level and be wrapped in DPC to form an impervious sock.

### NOTE.

Where Quoins are used on corners, firestops to be relocated to first stud in from corner which is not obstructed.

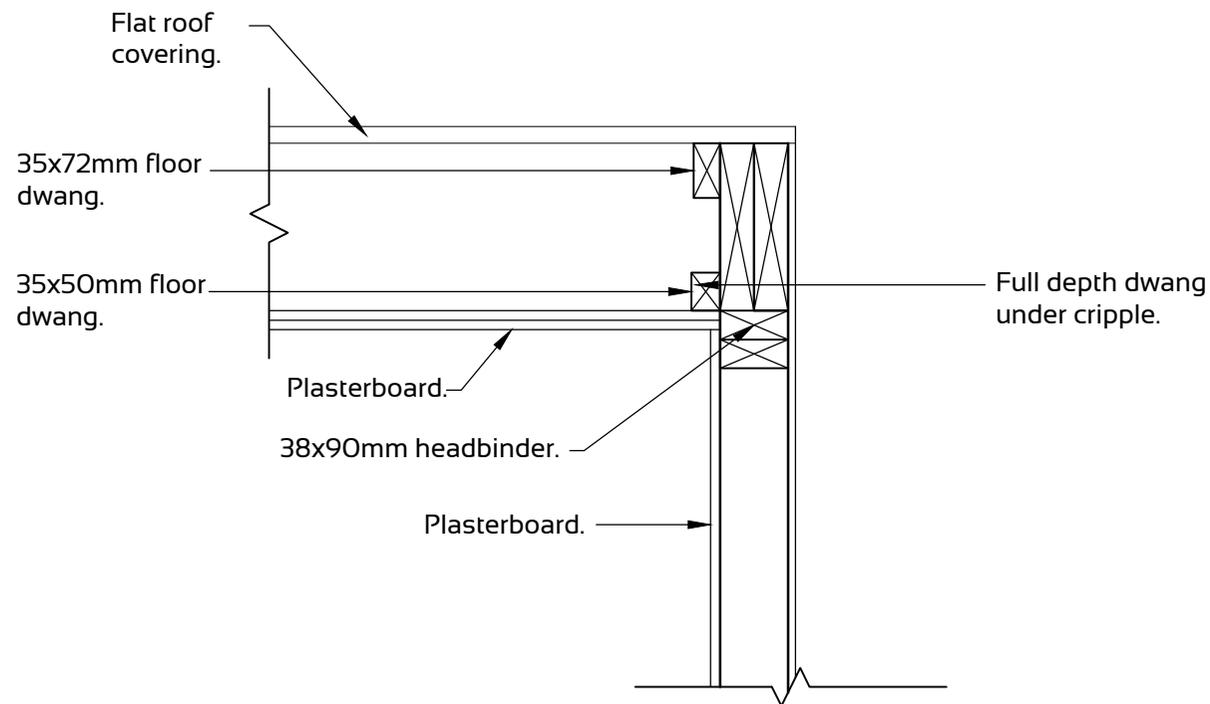


## Ceiling Joists Parallel with Wall.

(Scale 1:10)

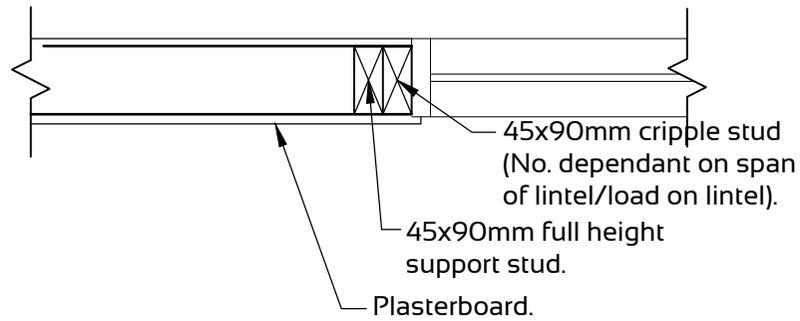
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 CONSULTING CIVIL & STRUCTURAL ENGINEERS  
 15 VICTORIA STREET, ABERDEEN TEL: 01224 642400  
 WEBSITE: WWW.CAMERONROSS.CO.UK

Timber Frame Details - TF18

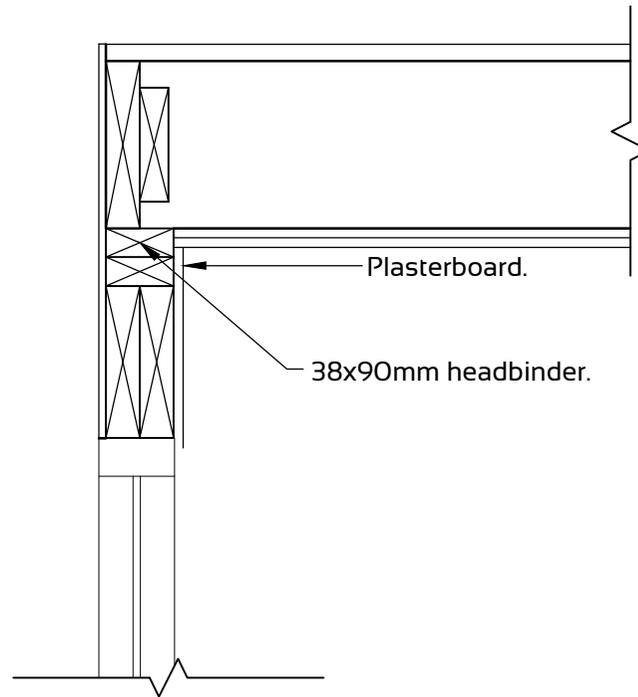


## Flat roof Joists Perpendicular with Wall.

(Scale 1:10)

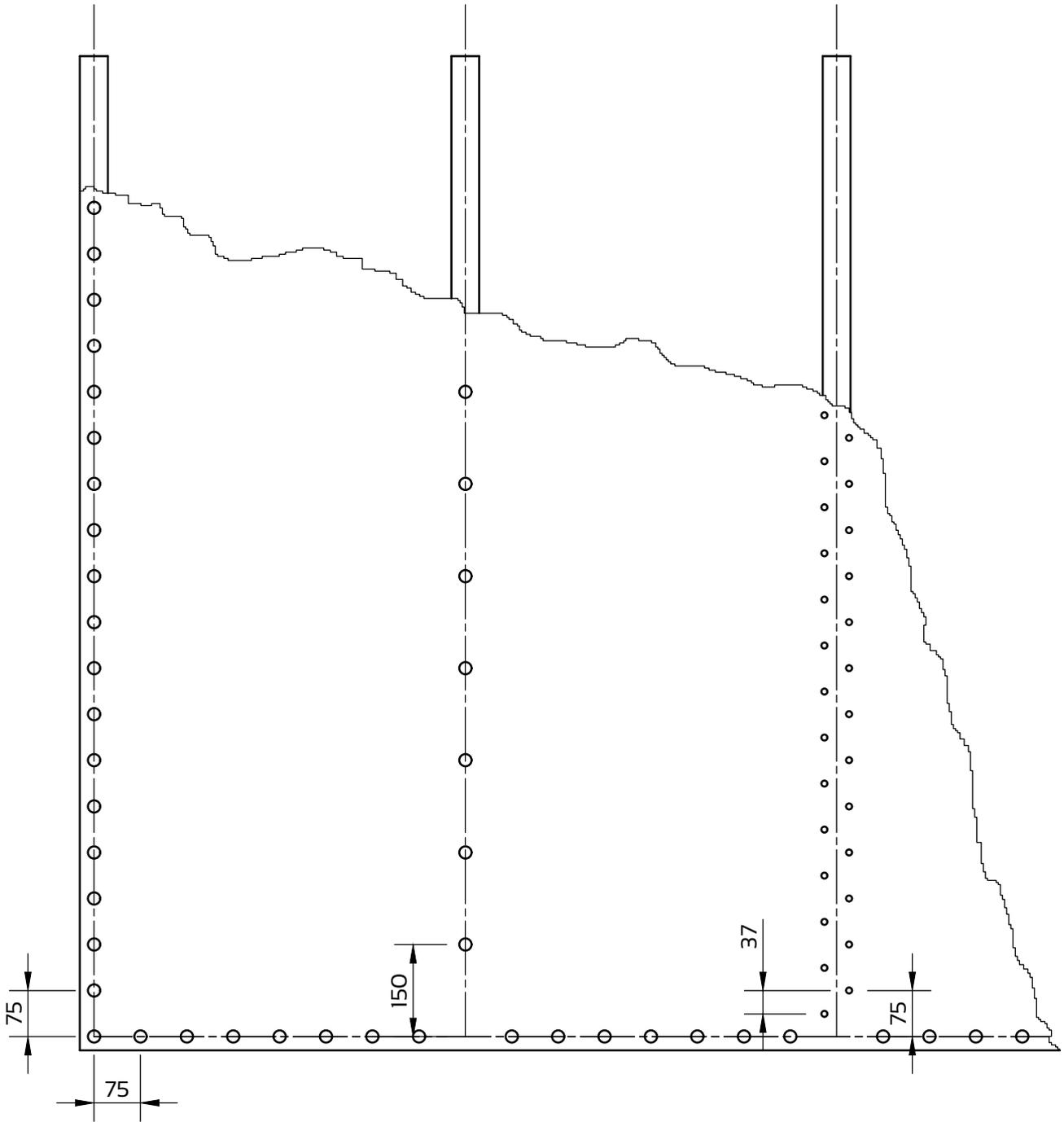


Plan Section Through Door Jamb  
(Scale 1:10)



## Typical Lintel Detail

(Scale 1:10)



Sheathing secured to frame using  
wire plain shank nails 50x2.85mm.

## Typical Fixing of Sheathing to Studs

(Unless Noted Otherwise on Panel Summary Sheet)

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CONSULTING CIVIL & STRUCTURAL ENGINEERS

15 VICTORIA STREET, ABERDEEN TEL: 01224 642400  
WEBSITE: WWW.CAMERONROSS.CO.UK

Timber Frame Details - TF23