

Existing modern 50x150 timbers at 400mm centres supported on the truss bottom chords, the end gable wall and the central crosswall with chimney. These timbers form the ceiling to the first floor rooms below and the floor to the loft above

Existing rafters supporting the thatched roof finish

Rafter elements shown with dashed lines for the two existing trusses that support the loft floor and purlin for the rafters

Bottom chord elements shown with dashed lines for the two existing trusses that support the loft floor. These timbers can be seen in the ceilings of the first floor rooms as they are set below the joists.

Lower ceiling in passageway

## Section DD Showing Existing Structure

Scale 1:50

### Steelwork:

- All steelwork to be in accordance with the current edition of the national structural steelwork specification for building construction CE marking version and BS 5950.
- Fabricator to check all dimension on site prior to fabrication.
- All steelwork to be grade S275 to BS EN10025 except all hollow sections to be hot formed grade S355 to BS EN10210. Shot-blasted to SA 2 1/2 and primed with a zinc rich epoxy, except where noted as hot dipped galvanised. Fire protection to architects specification.
- All steelwork below floor slab level and exposed in cavities to be given additional 2 coats of bituminous paint.
- Temporary bracing of the structure to be the responsibility of the steelwork sub-contractor.
- All bolts, nuts and washers to be sherardised or hot-spun galvanised.
- Unless noted otherwise, all bolts to be grade 8.8. with a min. 2 bolts/connection.
- Unless noted otherwise, all welds to be 6mm fillet weld, full profile.

Each end of each PFC elevated with cranked PFCs welded under beam with welded 150x200x10mm thick base plates.

Add new tie to each pair of existing rafters. Rafters from 50x100 timber fixed to existing rafters with M12 bolt each end.

Retain existing roof, rafters, purlins and trusses

Retain existing ceiling/floor joists but with new supporting beams to relieve load on trusses

New Steel Beams B10 and B11 each from 2No. 150x75x18 PFCs fixed back to back. Each end of each PFC elevated with cranked PFCs welded under beam with welded 150x200x10mm thick base plates.

Each PFC in two parts to aid installation. Joint in each PFC formed with 10mm thick welded end plates and 4No. M16 bolts. PFC joints to be located offset by 300mm from centre on alternate sides to give 600mm lap between the them. Lapped part to be fixed together with 6No. HSG M16 bolts.

Rafter feet tied to new timber Beam B14. Detail as shown on other side

Each rafter foot tied to new timber beam at floor level with twisted strap fixed with 4No. 6mm screws. Edge Beam B15 from 150x100 timbers with one chamfered edge. Edge Beam B15 fixed to Beams B10 & B11 with M12 bolts. Beam B15 with 100x100x10mm thick tabs welded to top flange of each PFC.

Back to Back PFCs with timbers bolted into the webs and 3mm plates welded below to support cut ends of existing joists either side of new inserted Steel Beams B10 & B11

## Section DD Showing Proposed Structure

Scale 1:50

### Timber:

- All timber to be grade C16 (unless noted otherwise) and in accordance with BS 5268.
- All truss / rafter ends to be fixed to wall plates with proprietary truss clips and held down with proprietary vertical straps fixed to masonry and truss / rafter ends.
- Gable walls to be restrained at ceiling tie and verge level to wall with proprietary steel straps turned over the inner leaf of the gable wall and fixed to noggins over a distance of minimum 3 No rafters.
- All restraint or holding down details and strap spacing's to be in accordance with Approved Document Part A and BS 5628.
- Plywood / OSB sheathing to be fixed to timber with 3mmØx50mm long nails at 150mm centres around edge of sheet and at 300mm centres along intermediate studs.
- Double and triple timbers to be well spiked together
- Proprietary hangers, restraint straps and truss clips to be fixed in accordance with manufacturers written instructions and recommendations.

### General Notes:

- This drawing is to be read in conjunction with all relevant Architects and Engineers drawings and specifications.
- Do not scale from this drawing. For all setting out dimensions refer to the Architects drawings and specifications. Any discrepancies to be reported immediately to Architect/Engineer.
- Safety and stability of the works during construction is the responsibility of the contractor who should phase the works and provide temporary supports as necessary.
- All proprietary items to be installed in accordance with the manufacturers recommendations.

### RISK ASSESSMENT

#### RESIDUAL RISKS IDENTIFIED

- None identified, 27/10/2021.



#### CONTRACTOR'S GENERAL RISK ITEMS

(List is not exhaustive but includes commonly raised issues)

- Location of all buried/hidden services.
- Foundation & drainage excavations: Stability of sides, undermining existing structures, diverting existing drainage or field drains, services etc.
- Manual lifting of heavy objects: Steel beams, Columns, Lintels, etc.
- Temporary stability of structure during the works.
- Falls from height or into excavations.
- Security: Keep site secure from members of the public. Maintain public safety when accessing site.

Rev	Description	Date
P4	Revert back to new steel beams to support floor	26/02/22
P3	Section marker changed to DD	08/11/21
P2	Change to fitch beam support to trusses	03/11/21
P1	First Issue	27/10/21

**Varndell**  
Engineering Ltd

Consulting Structural Engineers

Unit 7, Bicester Business Park,

Telford Road, Bicester, OX26 4LN

Tel: 01869 226020

email: info@varndell.engineer | Web: www.varndell.engineer

#### PROJECT

Ivy Cottage  
32 High Street  
Bodicote  
OX15 4BP

#### CLIENT

H Smart

#### TITLE

Sections DD Showing  
Existing and Proposed Structure

#### PURPOSE OF ISSUE

PRELIMINARY

DRAWN BY	CHECKED BY	DATE
CT	NV	27/10/2021
SCALES @ A3:		PROJECT NUMBER
1:50		VE21088
DRAWING NUMBER		REV
21008/11		P4