T.B.C. - CONTRACTOR CONFIRMATION REQUIRED

Limited visual survey of existing building could not determine full structural arrangement. Contractor to remove finishes and confirm the following items prior to proceeding with works and ordering materials:

1. JOIST SPAN DIRECTION
   Existing joists and any trimmers span the direction indicated with no support provided by any intermediate stud partitions. Confirm no trimmers or floor beams are present within floor spanning opposite to direction indicated.
2. CHECK EXISTING LINTEL
   Remove existing finishes and confirm size, type and condition of existing lintel is satisfactory. Cost allowance to be made for replacement if necessary.

Any discrepancy is to be reported to Severn Structural Engineering Ltd. for approval prior to proceeding.

BUILDING REGULATIONS APPROVED DOCUMENT A

All structure, unless specified otherwise, is to comply with building regulations approved document A.

EXISTING STRUCTURE

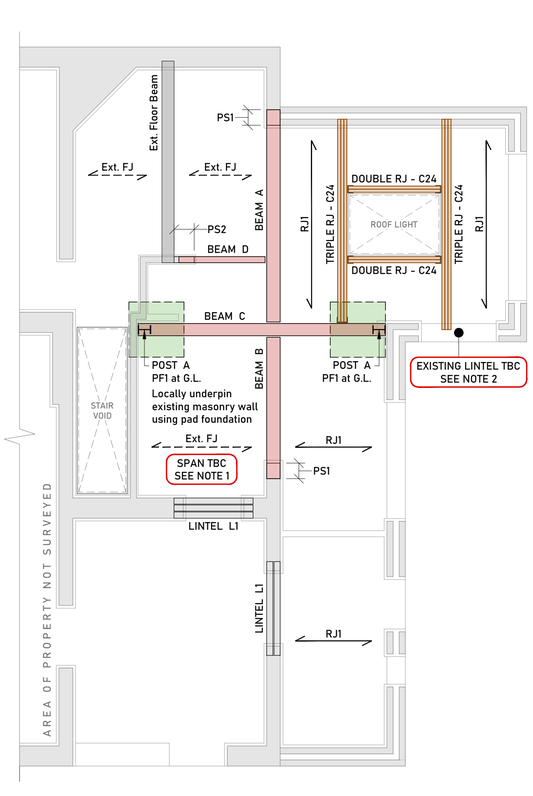
Existing masonry to be examined for defect. Repair and consolidate as required by replacing masonry units and mortar to match existing.

Existing timber to be inspected for material defect and repaired/replaced as required. Refer to timber specialists if necessary.

Existing lintels are to be inspected and confirmed acceptable. Remove existing finishes and confirm size, type and condition of existing lintels are satisfactory. Cost allowance to be made for replacement if necessary.

STEEL MEMBER KEY - HOT ROLLED S355

BEAM A	203 x 203 x 46 UC
BEAM B	203 x 203 x 46 UC
BEAM C	203 x 203 x 46 UC
BEAM D	203 x 102 x 23 UB
POST A	203 x 133 x 30 UB



FIRST FLOOR STRUCTURE G.A.

With ground floor walls under

PADSTONE KEY

PS1	255 x 125mm deep - pre-cast concrete bullnose kerbstone Width to suit wall thickness
PS2	CLASS B ENGINEERING BRICK

Padstones to be positioned centrally under beams unless detailed otherwise.

Beams running parallel to padstone:	250mm bearing
Beams running perpendicular to padstone:	Full bearing

Existing masonry to be examined for defect - repair and consolidate as required replacing units and mortar type to match existing.

PROPRIETARY LINTELS

LINTEL L1	Stressline - R15A 100 x 140 mm deep Prestressed Concrete Standard Lintel

Number of pre-cast concrete lintels to suit wall thickness.

Prior to ordering proprietary lintels, the contractor is to ensure lintel specifications comply with the wall construction and any cavity width in accordance with the Manufactures information. Lintels to be installed in accordance with the manufacturers information.

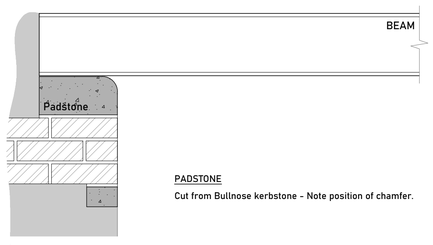
PAD FOUNDATIONS

PF1	900 x 900 x 600mm deep pad foundation RC35 A393 mesh in top & bottom (50mm cover to all faces unless detailed otherwise)

Pad foundations designed based on assumed ground conditions with a min. allowable ground bearing pressure of 125 kPa. Formation level taken down to same level as extension strip foundation and be approved by building control.

Locally underpin existing masonry wall using new foundation.

- The excavation and concreting should take place on the same day whenever practical.
- The existing footings are to be scraped clean and wire brushed. Any defects are to be repaired and consolidated.
- Provide sacrificial trench sheets to retain existing ground if required.
- Flood concrete in the excavation to above the level of the existing foundation, compacting by the use of a vibrating poker to ensure the release of air trapped against the underside footing.



PADSTONE

Cut from Bullnose kerbstone - Note position of chamfer.

MASONRY

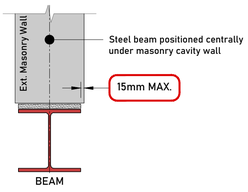
Rebuild top 3 courses under padstone in class B engineering brick.

Ensure existing masonry is well consolidated
- replace and repair masonry units and mortar as required.

Where the existing wall is cut back, provide sections of precast lintels at 450mm vertical centres to consolidate masonry ensuring masonry is fully cross bonded across the cavity at bearings.

DETAIL 1.1

Padstone Bearing - PS1



DRY PACK MORTAR (EXISTING MASONRY)

Dry pack mortar / slate to be well rammed in between existing masonry and new steel beam to ensure a good and even bearing for supported masonry above.

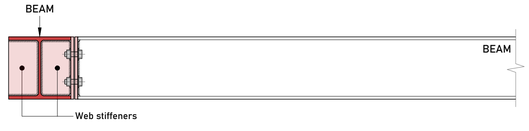
- Ensure dry pack is consistently spread out along full length of beam / lintel.
- Allow sufficient time for mortar to cure prior to removing any temporary support.

MASONRY OVERHANG

Should the existing wall be wider than the proposed steel beam, resulting in an overhang greater than 25mm, contact Severn Structural Engineering for further advice prior to ordering materials.

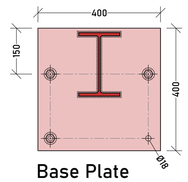
DETAIL 1.2

Masonry Support



BEAM TO BEAM CONNECTION

END PLATE:	12mm thick mild steel
SIDE PLATE:	12mm thick mild steel
FIXINGS:	4No. M16 grade 8.8 bolts
WEB STIFFENERS:	10mm thick central to connection



Base Plate

DETAIL 1.3

Steel Beam to Beam Connection

CUT TIMBER SOLID JOISTS / ROOF RAFTERS

Minimum size / grade and maximum centres noted on plan:

RJ1: 50 x 150 C16 at 400mm max. c/c

Provide full depth blocking between members where shown on plan and where members bear onto steelwork, intermediate walls, or are supported by joist hangers.

Detailing may require a greater section size - refer to Architectural information.

Provide additional multiple members as noted on plan using grade C24 timbers secured together using M12 grade 4.6 bolts at 600mm centers, 150mm from ends.

Timbers deeper than 175mm, provide 2No. bolts 150mm from ends and under perpendicular structural members.

TIMBER END GRAIN PROTECTION

Minimum 100mm masonry bearings. Timber painted with wood preserver or similar on end grain and on all faces within masonry bearing.

LATERAL RESTRAINT - L.R.

Lateral restraint to conform to Building Regulations Approved Document A Section 2C32 - Lateral support by roof and floors. Refer to architectural's specification.

Provide additional straps as indicated on plan.

Minimum Requirements:
Galvanised mild steel restraint straps 30 x 5mm thick, declared tensile strength not less than 8kN (conforming to BS EN 845-1).

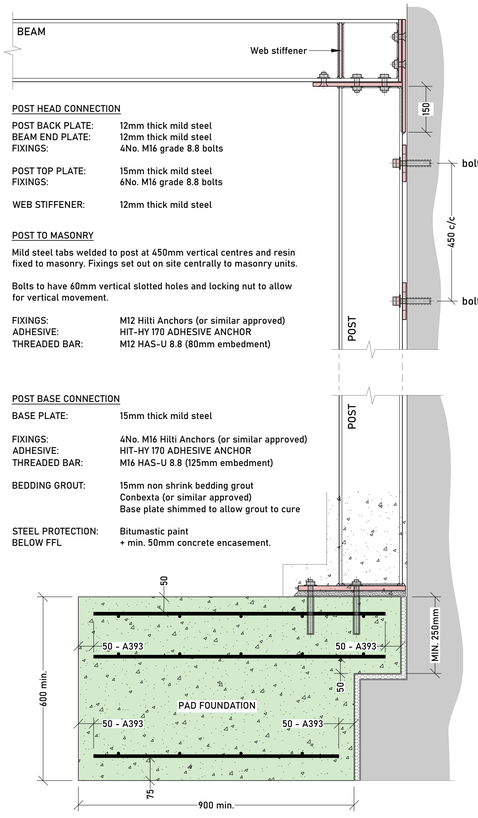
Vertical Straps:	Min. 1000 long at max. 2000 c/c, 6 masonry fixings
Longitudinal Straps:	Min. 1500 long at max. 2000 c/c, 3 rafter/joist fixings
Timber Fixings:	3.35Ø x 50 long round wire nails
Masonry Fixings:	Plugged and screwed
Noggins:	Provide noggins where required, min. ½ depth of members.

DIMENSIONS TO BE CONFIRMED ON SITE PRIOR TO FABRICATION

FIRE PROTECTION TO ARCHITECTS SPECIFICATION TO COMPLY WITH BUILDING REGULATIONS

ALL WELDS 6mm FILLET WELDS U.N.O.
SITE WELDING IN NOT PERMITTED

FIXINGS TO BE COUNTERSUNK IF REQUIRED FOR FINISHES



POST HEAD CONNECTION

POST BACK PLATE:	12mm thick mild steel
BEAM END PLATE:	12mm thick mild steel
FIXINGS:	4No. M16 grade 8.8 bolts
POST TOP PLATE:	15mm thick mild steel
FIXINGS:	6No. M16 grade 8.8 bolts
WEB STIFFENER:	12mm thick mild steel

POST TO MASONRY

Mild steel tabs welded to post at 450mm vertical centres and resin fixed to masonry. Fixings set out on site centrally to masonry units.

Bolts to have 60mm vertical slotted holes and locking nut to allow for vertical movement.

FIXINGS:	M12 Hilti Anchors (or similar approved)
ADHESIVE:	HIT-HY 170 ADHESIVE ANCHOR
THREADED BAR:	M12 HAS-U 8.8 (80mm embedment)

POST BASE CONNECTION

BASE PLATE:	15mm thick mild steel
FIXINGS:	4No. M16 Hilti Anchors (or similar approved)
ADHESIVE:	HIT-HY 170 ADHESIVE ANCHOR
THREADED BAR:	M16 HAS-U 8.8 (125mm embedment)
BEDDING GROUT:	15mm non shrink bedding grout Conbextа (or similar approved) Base plate shimmed to allow grout to cure
STEEL PROTECTION: BELOW FFL	Bitumastic paint + min. 50mm concrete encasement.

DETAIL 1.4

Steel Post Connections

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CONSTRUCTION NOTES

Drawing to be cross referenced with all other relevant designers' information. Any discrepancy is to be reported to Severn Structural Engineering Ltd. for approval prior to proceeding.

DO NOT SCALE off this drawing - only written dimensions should be used. The Contractor is to undertake site measurements prior to ordering materials and fabrication.

Only elements formally specified on this drawing have been designed by Severn Structural Engineering Ltd. All other elements are designed by others - refer to relevant designer's information.

All setting out, finishes (incl. fire protection) and services (incl. drainage) are designed and detailed by others unless otherwise noted on this drawing - refer to Architectural information.

Existing structure is to be confirmed by the Contractor. Remove finishes and confirm existing arrangement prior to proceeding with works - any discrepancy to be reported to Severn Structural Engineering Ltd. for approval prior to proceeding.

All proprietary building products are to be installed in accordance with the manufacturer's information.

Construction work is to be carried out in accordance with BS 8000 - Workmanship on Building Sites.

All temporary support is the responsibility of the contractor - refer to Engineer for advice if required.

STEEL GRADE - Hot Rolled
All structural steel to be C.E. marked to BS EN 1090

In accordance with BS EN 10025 & BS EN 10210, steel to be grade:

Internal:	S355JR
External:	S355J2
Hollow:	S355J2H

Site welding is not permitted.

STEEL PREPARATION/COATING
- Blast cleaned (SA2.5)
- Zinc phosphate primer
(min. 1 coat, factory applied)

STEEL PROTECTION
All steelwork to be adequately protected - refer to NHBC Standards Section 6.5.3 Steel grade and coatings.

Below FFL:	Bitumastic paint
+	min. 50mm concrete
External:	Hot-dip galvanised
Fire:	To Architect / building control's requirement.

CONCRETE
In accordance with BS 8500:

GEN1	Blinding / Mass Conc. Fill
GEN3	Mass Conc. Foundations
RC35	Reinforced Concrete U.N.O.

Concrete to be compacted using a vibrating poker during casting. Ensure adequate cover to reinforcement is achieved using proprietary spacers.

Rev.	Description of revision:	Date:
-	-	-

BUILDING REGS ISSUE

Drawing issued for approval by Building Control and to be included in the Building Regulation Contract Documents. Information not to be used for construction or ordering of materials - use of information at own risk.

PROJECT NAME / ADDRESS:

THE OLD SMITHY
3 WREXHAM ROAD
OVERTON, WREXHAM

DRAWING TITLE:

STRUCTURAL WORKS ARRANGEMENT & DETAILS

DRAWING NUMBER:	24119 / 11	REVISION:	-
SCALE:	1:50 1:10	PAPER SIZE:	A1
DATE:	25/11/2024	DRAWN BY:	KV

The Pump House
Coton Hill
Shrewsbury
SY1 2DP
01743 383 098

Severn Structural Engineering Ltd

info@SevernEngineering.co.uk www.SevernEngineering.co.uk