NOTES

1. GENERAL – These notes must be read in conjunction with all drawings and details, including those issued by the Architect. Any discrepancies in details must be reported to the Architect and/or Structural Engineer immediately. The works are to comply with current British Standards, Eurocodes and Building Regulations. All materials must conform to current British Standards and hold a current British Board of Agreement Certificate and be used in strict accordance with the manufacturer's recommendations. These drawings should be read in conjunction with, and checked against, specialist supplier's drawings and details before approval/acceptance of them.

2. SETTING OUT AND DIMENSIONS – All setting and dimensions shall be taken from the Architectural drawings. All finalised dimensions must be confirmed on site and with the client before commencement of works. All structural drawings shall be read in conjunction with relevant investigation and survey drawings and reports. Dimensions of all elements that are to be manufactured 'off-site' shall be checked prior to fabrication and any discrepancies shall be reported immediately.

3. ALTERATION WORKS EXISTING BUILDINGS – For alteration works to existing buildings, all dimensions and levels shall be taken from the Architectural drawings, and also checked on site prior to Construction. The structural drawings have been produced on the basis of information provided by the Client/Architect. All member arrangements and details shown here must be confirmed by the Builder once the structure is exposed and more detailed information becomes available. Prior to works commencing, all dimensions and details relating to the new and existing structure are therefore to be checked and verified by the Builder. Any modifications to design/details that are required as a result of these "site checks" must be agreed with the Architect and/or Structural Engineer prior to works proceeding.

4. BUILDING REGULATIONS AND STATUTORY AUTHORITY REQUIREMENTS – All work must comply with the current Building Regulations and the technical design and constructional requirements of the current Approved Documents.
   The Contractor shall liaise with and meet the requirements of the L.A. Building Control/Certifying body, giving required notices of stages of works as required by the Building Regulations including:
   - Foundation excavations before any concrete is laid.
   - Over site covering to ground floors before any concrete is laid.
   - Foul and surface water drainage before any pipes are covered over.
   - Structural timbers (upper storey floor joists/beams and roof structure before any coverings are fixed.
   - Completion of building prior to occupation.

   The Contractor shall be aware of and shall abide by requirements of the statutory authorities' guidelines with regards to existing and new works. The contractor shall, where necessary, liaise with the relevant authorities in respect of the execution of the works, to obtain approvals, arranging for authorised access, ensure the protection of existing and adjoining properties and services, etc. The principal contractor is also responsible for co-ordinating the work of his timber and steelwork sub-contractors. He should ensure that the assemblage of all specialist supply items are adequately co-ordinated such that site works are not hindered (avoiding any delay to the programme).

5. DEMOLITION – Structures exceeding 50m^3 in volume to be demolished will require a notice of demolition to be served on the Local Authority. Please contact your building control department for more information. CDM regulations will also apply.

6. EXCAVATIONS – The integrity of all excavations shall be maintained by, and be the responsibility of, the Builder/Contractor at all times. During excavation, the integrity of all existing services must also be maintained.

7. SITE DRAINAGE – For details of all drainage requirements, refer to Architectural drawings or drawings from specialist drainage/civils designer.

8. FOUNDATIONS – Remove surface coverings, concrete, slabs and all topsoil, vegetable matter or deleterious material; excavate and re-grade to required levels for new concrete foundations. The formation level of the foundations is to be below the influence of drains, and/or surrounding trees on level, firm, natural, undisturbed ground of adequate ground bearing capacity to the satisfaction of the Building Control Officer or approved inspector, but an allowance should be made for potential deepening/reinforcement etc. A minimum permissible ground bearing pressure of 100kN/m^2 has been assumed in the design. The Formation level is to be a minimum of 1000mm below existing ground level. For extension/alteration works to existing buildings, formation level should match existing only if this is greater than 1000mm below existing ground level. Where new foundations abut existing foundations, Builder to provide min. 2No. 400mm long H16 dowel bars to provide positive connection between new and existing. These should be fixed 200mm into existing foundation using FOSROC Lokfix E55 resin in 24mm diameter holes and cast 200mm into new foundation.
   Where clay substrata is encountered, all foundations are to be concreted on the same day as the excavation works, or otherwise the base of all excavations shall be blinded with 50mm of GEN 1 concrete below specified formation level. The formation for all 'Reinforced Concrete' foundations shall be blinded with 50mm GEN 1 concrete.
   All Strip foundations are to be "centred" under walls or dimensioned otherwise, and foundations can therefore be set out from the Architectural drawings.
   All Pads foundations are to be centred on columns.
   Steps in foundation level should not exceed its thickness and should overlap by twice its thickness. One layer of A252 mesh reinforcement or stronger shall be provided in the top with 75mm cover.
   Where redundant drains and foundations occur under new foundations they are to be grubbed out and back-filled with GEN 1 concrete to the approval of the engineer. The contractor is to notify the structural engineer if:
   - A natural bearing formation of undisturbed subsoil is not obtained at the recommended depth shown on the drawings.
   - The formation contains soft or hard spots or highly variable material. Any soft spots encountered at foundation level are to be excavated and back-filled with GEN 1 concrete to the approval of the engineer.
   - Any newly excavated faces are too unstable to allow earthwork support to be inserted.
   - Instability is likely to affect adjacent structures, take appropriate emergency action.
   - Unrecovered foundations, beds, voids, basements, filling, tanks, pipes, cables, drains, manholes, watercourses, ditches, etc. not shown on the drawings are encountered.

   IMPORTANT NOTE: CLAY SOILS AND TREES – If, following the commencement of the excavation works, clay strata is encountered in the ground AND if trees are located within 35 metres, it will be necessary for the construction of the foundations to pay due cognizance of this to ensure that they are not adversely affected by any seasonal movement of the clay soils. If this is found to be the case, our practice should be contacted for consultation regarding the design of the foundations.

9. LIMITATIONS ON PROPOSED NEW PLANTING – The foundation design of this building assumes that if there are clay soils present that new planting will be restricted to the following:
   - Shrubs/hedges should have a maintained height of not greater than 1.5m and be in a zone no closer than 2.0m away from the building.

   Alternatively, shrubs/hedges should have a maintained height of not greater than 2.0m and be in a zone no closer than 2.5m away from the building.
   - Any trees having a maximum mature height of 10m or less should be no closer than 12.5m from the building.
   - Any trees having a maximum mature height of 15m or less should be no closer than 19.0m from the building.
   - Any trees having a maximum mature height of 20m or less should be no closer than 25m from the building.
   - Poplar trees should not be located within 35m of the building.

   The above guidelines are based off a possible worst case shrinkability conditions and assume that there is an insignificant level difference in ground level between the position of the nearest foundations and the position of the proposed planting.

   If there is proposed planting that does not fit within the accepted parameters above, then the Structural Engineer should be notified. The Structural Engineer needs to be notified because foundation deepening may be required in accordance with the NHBC Chapter 4.2 guidelines.

10. RADON PROTECTION – All radon protection shall be to the Architectural details.

11. CONCRETE MIXES –
   Blinding: GEN 1
   Mass concrete trench fill and pad foundations: GEN 3 with a design sulphate class DS-1 and ACEC Class AC-1.
   RC retaining walls: Cast In situ padstones.

12. STRUCTURAL STEELWORK: GENERAL – All steelwork to be in accordance with the "National Structural Steelwork Specification 2010" unless noted otherwise:
   All Steelwork is to be grade S355 and is to be hot finished.
   All Hollow Sections to be grade S355 and to be hot rolled sections.
   Any steelwork for an external or uninsulated environment should have a J0 sub-grade.
   Any internal steelwork subject to room temperature should have a JR sub-grade.
   All welds shall be 6mm FPFW unless noted otherwise (full profile fillet welds). All connecting plates shall be a minimum of 10mm thick unless noted otherwise. All bolts shall be M16 grade 8.8 unless noted otherwise.
   A minimum of 2No M16 bolts per connection or connections are to be used, which shall be capable of a minimum design tensile capacity of 75kN.
   Unless dimensioned otherwise, steel fabricators to adhere to minimum bolts spacings as follows (where D=Bolt Diameter):
   - 1.5D for edge distance.
   - 2.0D for end distance
   - 3.0D for pitch/gauge

   Where timber blocking is to be fixed through the steel beam web to support timber structure, these should be min. grade C16 and should be fixed through the beam web with min. M16 Gr8.8 bolts at max. 400mm ctrs centrally located (U.N.O).
   Timber wall plates to be min. grade C16 and fixed to top flange of steel beams with min. M16 Gr8.8 bolts staggered at max. 400mm ctrs.
   All Holding Down bolts should be checked (within 24hrs of being cast into foundations) for position, level and freedom of movement. Denso tape shall be used to protect HD bolts. All hollow sections shall be sealed at each end with 6mm cap plates connected with single bevel butt welds and where galvanised, vent holes shall be provided. Prior to the fabrication of structural steelwork elements for the works, the contractor is to carry out a dimensional survey of the supporting structure to facilitate the preparation of workshop drawings and erection. Fabrication drawings and details are to be submitted to the Engineer for approval.

13. STEELWORK BEARINGS – Where new steelwork beams are to bear either directly onto masonry, or onto Padstones they should be bedded on a 15mm CONBEXTRA GP grout bed. Where steel beams are supported by a perpendicular wall, the beam should sit on the full thickness of the wall (i.e. 100mm wall = 100mm bearing). Where steel beams sit on padstones, the beam should be located centrally on the padstone (unless specifically detailed otherwise).

14. STEELWORK PAINT CORROSION PROTECTION – All steelwork is to be blast cleaned to BS 7079: pt A1 grade SA 2.5 and shop painted with 80 microns (Dry Film Thickness) of high build zinc phosphate epoxy primer or similar specification to the approval of the Engineer. Internally exposed steelwork is to be site painted with Alkyd finish with a Dry Film Thickness of 60 microns

cont.....

PRELIMINARY

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CLIENT	Mr. C. Fordham
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DRAWING	Notes

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22/103	D01		A3

NOTES
.....cont.

15. STEELWORK FIRE PROTECTION – All fire protection shall be to the Architectural details .

16. GALVANISED STEELWORK – All external/exposed steelwork to be hot dip galvanised to BSEN ISO 1461 followed by:
Thoroughly clean and degrease with Envirogard W500 Degreaser, fresh water rinse and allow to dry before applying Leighs L703 Mordant Wash.
Primer: Use EPIGRIP K267HS Micaceous Iron Oxide, 100 microns. Applied in–shop or on site.
Finish: Use RESISTEX C137V2 Special Finish, 50 microns. Applied in–shop or on site.

17. GROUND BEARING SLABS – Ground bearing slabs are to architects/specialists details. Due care should be taken as to avoid any excavations undermining the bearing condition of the exisitng wall foundations. Undepinning may be required if excavations will cut into the 45° standard zone of spread of the existing foundations. Localised trial pits are recommended as a means to determine whether this is likely to be an issue.

18. STRUCTURAL TIMBER: GENERAL – All timber shall have a maximum moisture content of 18% on installation and shall be adequately protected in accordance with Eurocode 5 during erection. All timbers are to be treated with a suitable preservative in accordance with Eurocode 5.
Where two or more timber elements are to be joined together to form a structural trimmer or beam member, they shall be connected by M16 Gr8.8 bolts at max. 800mm ctrs centrally located.
Minimum bearing for joists shall be 90mm.
Strutting of Floor joists: Strutting to be min 38mm thick and three quarters the depth of the joists.
Up to 2.5m span – not required.
2.5 to 4.5m span – one line of struts at centre of span.
Over 4.5m span – two lines of strutting at third points.
Timber joists supported by Steelwork beams are, for practical purposes, to project above the top steel flange by a min of 12mm and below the bottom steel flange by a min 2mm.
All timber members built into an external skin of masonry to have two coats of bitumen paint (by RKO or similar approved) applied to all faces, to within 10mm of any visible surface.
All bolts through timber members shall have appropriate washers to Eurocode 5. All ancillary steelwork associated with Timber members shall be to Eurocode 5 specifications. No fissures, knots or wanes shall be permitted at timber joints.
Specialists advice should be sought for treatment/removal of issues such as woodworm, potential dry rot etc.

19. INTERMEDIATE TIMBER FLOORS – Floor to be constructed of kiln dried structural grade timber joists with sizes and spacing suitable for the proposed clear span as annotated on the drawing'. Alternatively, manufactured timber engineered Posi–joists or I–joists can be installed with sizes and spacing suitable for the proposed clear span and fixed in compliance with the joist manufacturer's standard span tables including trimmer and trimming joists, etc. All joists to be supported by heavy duty proprietary galvanised metal restraint joist hangers (see 'Recommended Hangers' note) built into walls or fixed to treated timber wall plates (same sizes as joists) fixed to walls with FISHER FIS V M16 Gr8.8 resin fixings at 400 centres with a minimum embedment depth of 85mm (or similar, must be approved by S.E.) – must be installed to manufacturers details. Alternatively, joists can be built into walls using approved proprietary sealed joist caps. Joists to be doubled up and bolted together for trimmers under partitions and baths. Floor joist covering to be a minimum of 22mm softwood tongue and groove softwood boards or moisture resistant particle/chipboard to give overall 30 minutes fire resistance. Strutting of Joists as above.
Walls parallel to floor joists are to be mechanically fixed with lateral restraint straps across at least 3 joists and built tight into the inner block of the cavity wall using 30mm x 5mm x 1000mm straps at maximum 2m centres with packing and noggins at least half the depth of the joist and at least 38mm thick.

20. CUT TIMBER ROOFS – Roof to be constructed using kiln dried stress graded timber. Rafters, ceiling joists, purlins and hanger and binder sizes as stated on the Structural plan drawings and all properly connected using approved fixings.
Where the ceiling joists are raised above wall plate level they must be fixed within the bottom quarter of the rafter using an M16 bolts with a steel tooth–plate connector to connect each rafter and ceiling joist to prevent roof spread. Joists raised above this level are to be designed by the Structural Engineer before works commence.
Allow for all necessary alteration/modification of any existing adjoining roof as required to enable the proper completion of the works and in agreement with Building Control.

21. LATERAL STABILITY FOR CUT ROOFS – For overall stability 9.0mm plyboard is to be nailed to the underside of all rafters, using 3.5mm diam Round Wire Nails 60mm long at 150mm crs on the perimeter and at 300mm crs internally OR 12.5mm Plasterboard fixed with 2.65mm diameter plasterboard nails at least 40mm long at max 150mm centres. Also provide 75mm wide noggins (to depth of rafter) along board joint lines to facilitate double nailing at joints.

22. HOLDING DOWN STRAPS – Provide 30x2.5mm hot dip galvanised (100x1000 long) HD straps at max 1200 crs along the length of all wall plates. Holding down straps for wall plates to be fixed to the walls with a min of six No.12 50mm long sheradized wood screws fixed into the centre of the blocks.

23. WALL PLATES – Where new work abuts existing, new Rafters/Floor Joists which are to be connected to existing masonry walls shall be supported by wall plates (47mm wide x the depth of the Rafter/Joist) fixed to walls with FISHER FIS V M16 Gr8.8 resin fixings at 400 centres with a minimum embedment depth of 85mm (or similar, must be approved by S.E.) – must be installed to manufacturers details. Depth of Anchor embedment shall be a maximum of 80mm for 100mm thick brick and block walls and 125mm in all other substrates. The diameter of hole required in the substrate is 18mm.

24. LATERAL RESTRAINT STRAPS – Walls to be restrained at intermediate floor and 1st floor ceiling and gable walls by the provision of 1350 long (150x1200) 30 x 5mm galvanised 'lateral restraint straps at maximum 1.8m centres carried across at least 3 joists or rafters, etc, with a minimum of 38mm wide x ¾ depth noggins.

25. PROPRIETARY PRODUCTS – All proprietary products are to be used strictly in accordance with the manufacturer's details and requirements.

26. ALTERED BUILDINGS – TEMPORARY SUPPORT WORKS – It is the Contractor's responsibility to provide adequate temporary supports where necessary prior to the removal of any loadbearing walls, and during the course of the works, in order to maintain structural stability. Where new beams are to be installed to support existing walls and floors above, slate packs are to be wedged between the top of the beam flange and the underside of the supported wall and/or floor prior to the release of the supporting system, in order to limit "slip" and minimise any surface cracking in the existing finishes on striking of the props.

27. RECOMMENDED HANGERS – Where hangers are required to support timber joists, we recommend the following:
- For typical situations: Simpson Strong–Tie SAE380
- For skewed/sloped/angled situations: Simpson Strong–Tie SAE380(X)
- If concealed hangers are required: Simpson Strong–Tie SAI380
- For hanging directly from masonry walls: Simpson Strong–Tie SFH

These are to be installed strictly to the manufacturer's guidance, and if alternatives are to be used, these must be approved by the Engineer.

28. RISK ASSESSMENT SCHEDULE – STRUCTURAL ENGINEERING

This assessment has been carried out in accordance with the Construction (Design and Management) Regulations 2015 and is primarily for the use of the Builder/Main Contractor but should also be considered by other professionals including Architects, Quantity Surveyors and sub–contractors.

The following schedule gives the Structural Engineer's assessment of residual risks which are either unusual or significant and which could not be eliminated during the design process.

Apart from the risks outlined below, no other unusual or significant risks or hazards related to the construction of this structure have been identified during the design process which, in our opinion, represent a greater risk or hazard than would normally be encountered in a construction project of this size and complexity. As such, it is anticipated that it will be within the capability of the contractor to adequately assess and deal with these risks. However, it is possible that additional areas of the works are identified by the Contractor that in their expert opinion also represent other unusual risks to either their workforce or others. Should this be the case these should be highlighted to the Principal Designer for consideration.

29. R1 – EXCAVATIONS AND RETAINING STRUCTURES
Hazard/Risk Description
To facilitate the construction of the new building, it will be necessary for excavation works to be undertaken for the Foundations and to reduce the ground levels for the construction of the Limcrete ground slab. Risk of undermining bearing condition of existing walls.
Recommended Contractor Action to Control or Mitigate the Risk
The works should proceed carefully. Suitable temporary support works should be allowed for or a method of working should be adopted whereby the works are sequenced such that at all times, the soils or adjacent structures remain stable. Should the builder be in any doubt as to what measures should be taken in the temporary condition or in respect of the stability of the existing buildings, then the engineer should be contacted.

R2 – UNUSUAL OR UNEXPECTED GROUND CONDITIONS
Hazard/Risk Description
It is possible, due to the limited information available in the design phase, that certain site conditions may not have been fully appreciated.
Recommended Contractor Action to Control or Mitigate the Risk
In the event that unusual/unfamiliar ground conditions are encountered by the builder the Contractor/Builder should immediately seek guidance from the Structural engineer.

R3 – EXISTING SERVICES
Hazard/Risk Description
Unknown location of existing services. Existing utility services within works area. Buried Gas and Electric and overhead cables connected to the existing building.
No existing services should be interfered with during the works, unless discussed and approved by the engineer, relevant professionals and governing bodies.
Recommended Contractor Action to Control or Mitigate the Risk
Should any previously unidentified existing services be encountered, the engineer should be contacted for guidance on the civil/structural design. Use scanners to detect services prior to excavations.

R4 – ALTERATIONS TO EXISTING STRUCTURES
Hazard/Risk Description
It is proposed to replace/enhance aspects of structure in the existing property. The existing structure above will, in the completed building, be supported by new/enhanced structural elements. Risk of collapse.
Recommended Contractor Action to Control or Mitigate the Risk
Prior to the installation of the new structure and the removal of the existing load bearing elements, it will be necessary for the Contractor/Builder to install a safe system of propping, which will require careful planning and execution. Temporary support loads can be provided if required. However, should the builder be in any doubt as to what measures should be taken in the temporary condition or in respect of the stability of the existing building then the engineer should be contacted.

PRELIMINARY
NOT FOR CONSTRUCTION

CLIENT
Mr. C. Fordham

PROJECT
Underdean House

DRAWING
Notes

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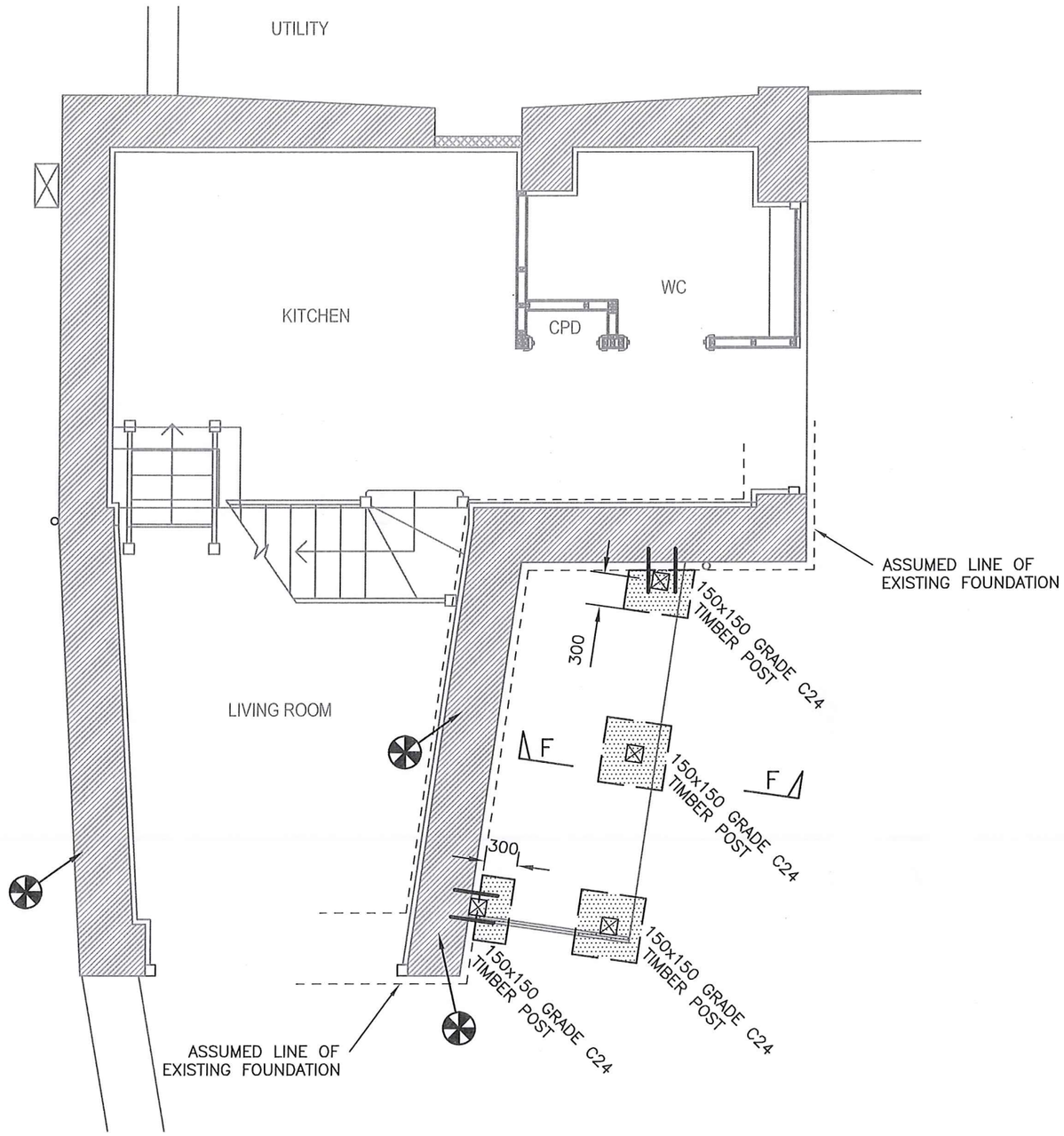

FOUNDATION/GROUND FLOOR PLAN

~ 600x600x600 DEEP MASS CONCRETE PAD FOUNDATION FORMATION LEVEL MINIMUM 1000mm BELOW ORIGINAL GROUND LEVEL –SEE NOTE 8–

~ 4No. H16 x 400mm LONG DOWEL BARS, 200mm INTO EXISTING FOOTING, FIXED WITH FOSROC LOKFIX E55 RESIN IN 24mmø HOLES

~ EXCAVATIONS FOR NEW LIMECRETE FLOOR MUST NOT UNDERMINE BEARING CONDITION OF EXISTING WALLS (EXCAVATIONS NOT TO CUT INTO 45° 'ZONE OF INFLUENCE' FROM WALL FORMATION) UNDERPINNING OF WALLS MAY BE NECESSARY

PRELIMINARY

NOT FOR CONSTRUCTION

CLIENT
Mr. C. Fordham

PROJECT
Underdean House

DRAWING
Foundation/Ground Floor Plan

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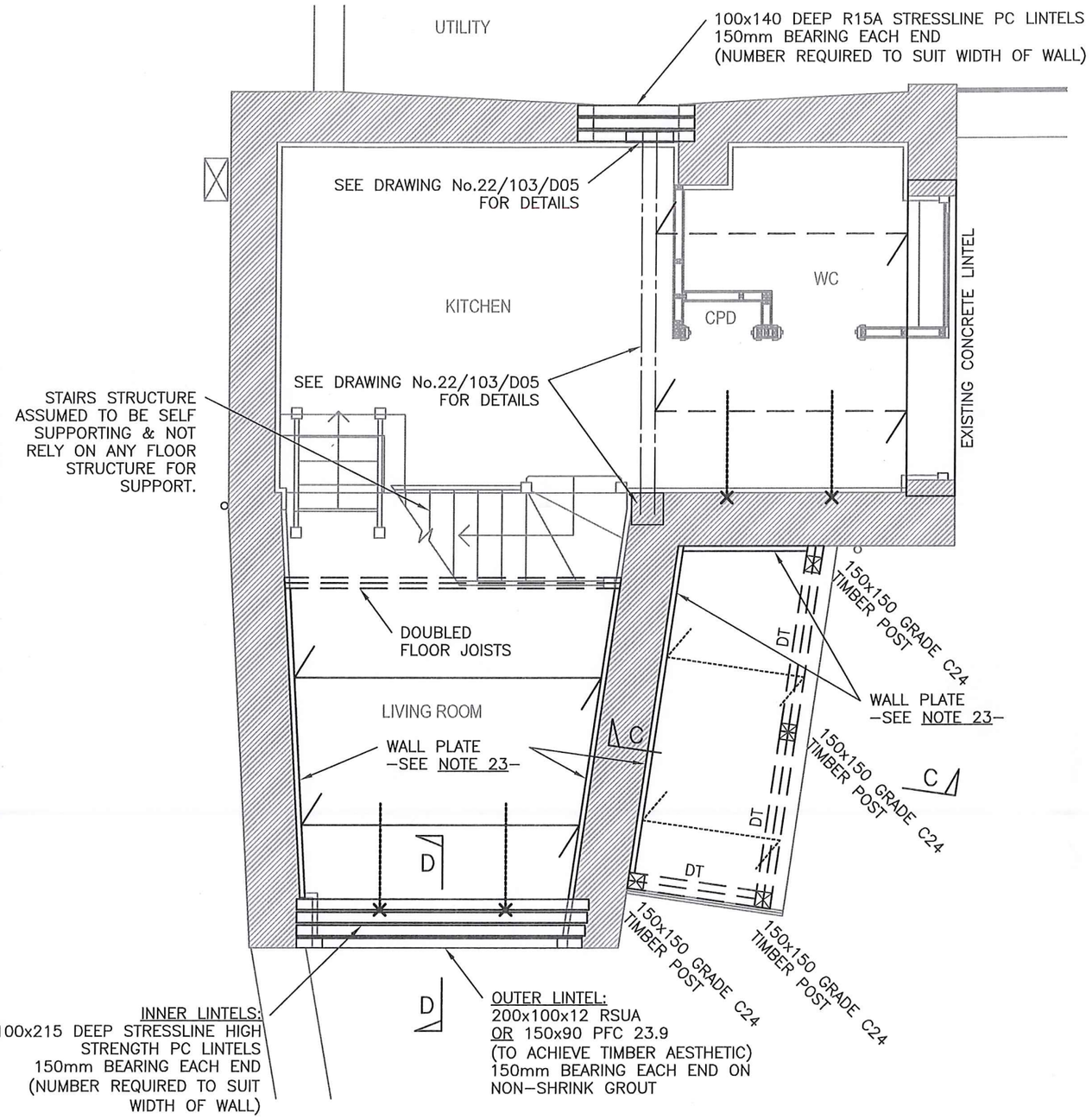
22/103	D03		A3



~ SPAN OF NEW RAFTERS
47x150 GRADE C24 @ 400mm CTS.
9.0mm PLY TO TOP/UNDERSIDE FOR LATERAL STABILITY
–SEE NOTE 21–

~ SPAN OF NEW RAFTERS
47x125 GRADE C24 @ 400mm CTS.

~ SPAN OF NEW FLOOR JOISTS
47x175 GRADE C24 @ 400mm CTS.

DT ~ DOUBLE 75x175 GRADE C24 TIMBERS

~ DENOTES LATERAL RESTRAINT STRAPS
–SEE NOTE 24–

GROUND FLOOR PLAN
SHOWING STRUCTURE OVER

PRELIMINARY
NOT FOR CONSTRUCTION

CLIENT
Mr. C. Fordham

PROJECT
Underdean House

DRAWING
Ground Floor Plan
~ Showing Structure Over

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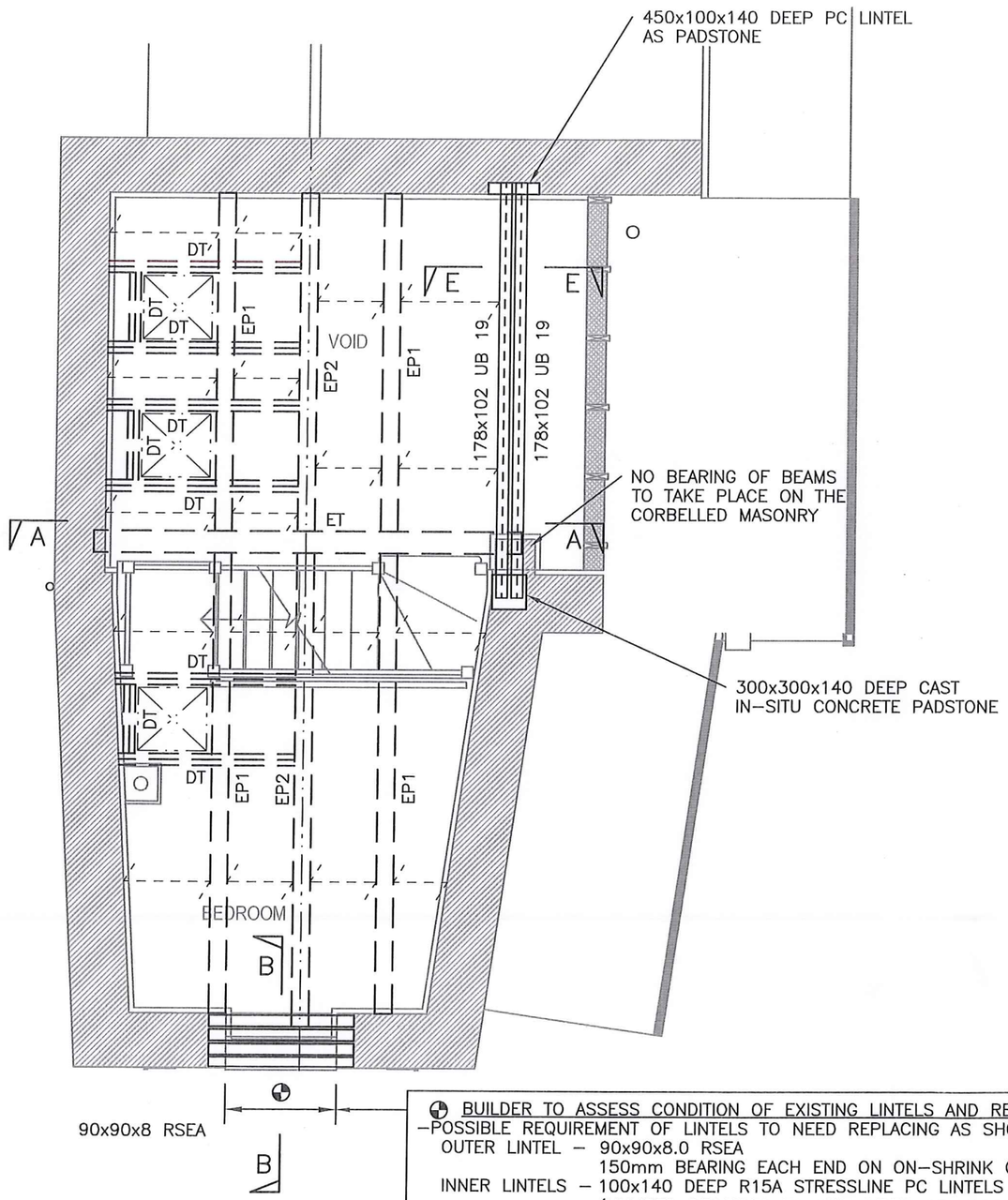
22/103	D04		A3



~ SPAN OF EXISTING RAFTERS TO BE ENHANCED WITH OR REPLACED WITH 47x150 GRADE C24 TIMBERS (@400CRS IF REPLACED)

ET ~ EXISTING TRUSS TOP CHORDS/PRINCIPAL RAFTERS TO BE ENHANCED WITH 2No. 47x195 GRADE C24 TIMBER BOLTED EITHER SIDE –SEE SECTION A~A FOR DETAILS–

EP1 ~ EXISTING PURLINS TO BE BOLTED TO 150x90 PFC 23.9 ENHANCEMENT MEMBERS WITH M12 GRADE 8.8 BOLTS @ 400mm CTS. ALONG LENGTH –SEE DETAIL 1 FOR CLARIFICATION & CONNECTIONS–

EP2 ~ EXISTING PURLINS TO BE REPLACED WITH 150x150 GRADE C24 COACH SCREWED TO 120x120x12 RSEA AS DETAILED ON DRAWING D07 –SEE DETAIL 2 FOR CLARIFICATION & CONNECTIONS–

OR ALTERNATIVELY

– EXISTING PURLINS CAN REMAIN WITHOUT ENHANCEMENT PROVIDING THE REPLACEMENT/ENHANCEMENT RAFTERS CANTILEVER OVER THE LOWER PURLINS WITHOUT A SIGNIFICANT NOTCH. (SEE VIEW A1 ON DRAWING D07 FOR CLARIFICATION)

DT ~ DOUBLE RAFTERS AS TRIMMERS TO ROOFLIGHTS

NOTE: EXISTING TIMBER ROOFING MEMBERS SHOW SIGNS OF WOODWORM GUIDANCE SHOULD BE SOUGHT FROM SPECIALIST REGARDING WOODWORM TREATMENT AND IMPLICATIONS ON WHETHER THESE EMBERS CAN BE RETAINED

BUILDER TO ASSESS CONDITION OF EXISTING LINTELS AND REPORT TO STRUCTURAL ENGINEER
–POSSIBLE REQUIREMENT OF LINTELS TO NEED REPLACING AS SHOWN BELOW–:
OUTER LINTEL – 90x90x8.0 RSEA
150mm BEARING EACH END ON ON–SHRINK GROUT
INNER LINTELS – 100x140 DEEP R15A STRESSLINE PC LINTELS ON NON–SHRINK GROUT
(NUMBER REQUIRED TO SUIT WIDTH OF MASONRY ABOVE)

FIRST FLOOR PLAN
SHOWING STRUCTURE OVER

PRELIMINARY
NOT FOR CONSTRUCTION

CLIENT: Mr. C. Fordham

PROJECT: Underdean House

DRAWING: First Floor Plan ~ Showing Structure Over

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EXISTING (85x 195mm) PRINCIPAL RAFTERS OF TRUSS ARE TO BE ENHANCED WITH 47x195mm GR C24 TIMBER EITHER SIDE, BOLTED WITH M16 BOLTS @ 300 CRS STAGGERED. SEE VIEW A1 FOR CLARIFICATION

EXISTING PURLIN TO BE UPGRADED TO 120x120 C24 TIMBER COACH SCREWED TO 120x120x12mm RSA AS PER DETAIL 2.

OR ALTERNATIVELY

EXISTING RIDGE PURLIN WILL BE SUFFICIENT & NOT NEED ENHANCEMENTS IF EXISTING RAFTERS ARE REPLACED WITH 47x150 GR C24 RAFTERS @ 400CTS THAT CANTILEVER OVER LOWER PAIR OF PURLINS (ENHANCED)

PURLIN TO BE ENHANCED WITH 150x90x24 UKPFC BOLTED TO PURLIN WITH M12 GR 8.8 BOLTS @ 400 CRS.

DETAIL 2

DETAIL 1

PRINCIPAL RAFTER ENHANCEMENTS AS DETAILED OPPOSITE SEE VIEW A1 FOR CLARIFICATION.

ENHANCEMENT TO LOWER PURLIN AS DETAILED OPPOSITE & IN DETAIL 1 (ALSO NOTE THAT CONNECTIONS & ENHANCEMENTS TO THESE LOWER PURLINS IS TO BE SIMILAR ON OPPOSITE SIDE OF TRUSS)

DETAIL 1 (MIRRORED)

VIEW A1

VIEW A1

STRUTS & BOTTOM CHORD DON'T REQUIRE ENHANCEMENT

2 No 178x102 UB 19s

SECTION A-A

~ NOTE:

AS AN ALTERNATIVE TO ENHANCING THE PRINCIPAL RAFTERS, TIMBER STRUT POSTS CAN BE INTRODUCED UNDER PURLINS POINT OF SUPPORT ON TRUSS. - SEE DETAILS ON DRAWING D10 -

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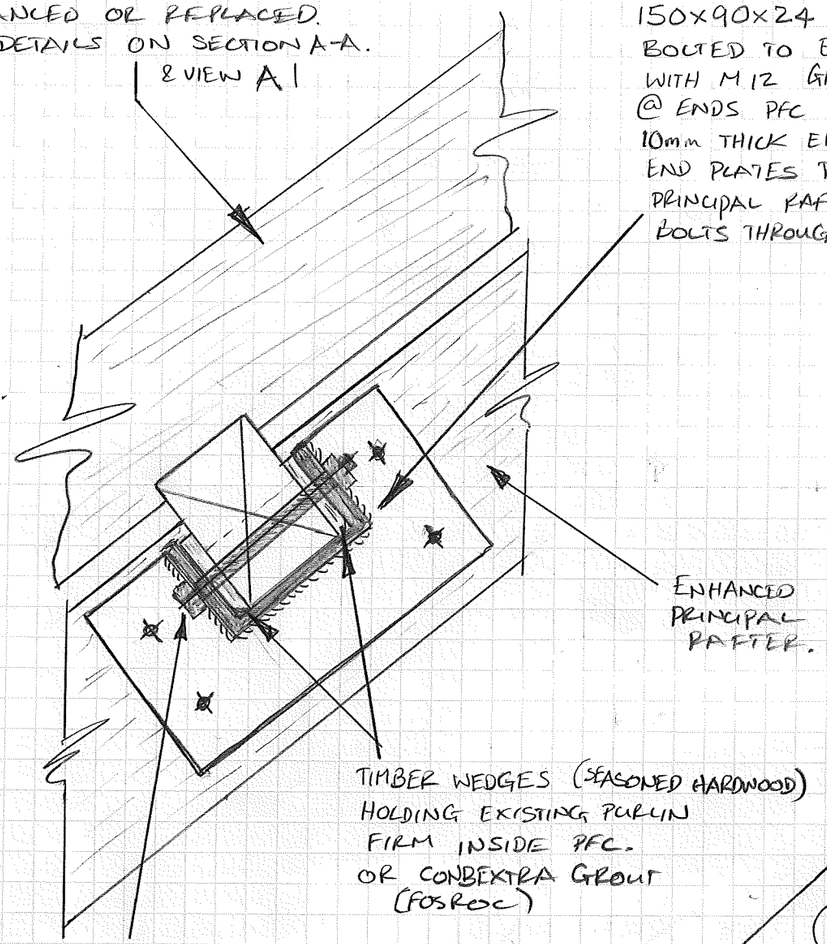
REVISION A - 13/09/22

PROJECT UNDERDEAN HOUSE	JOB No. 22/103	SHEET No. D06A
CLIENT MR C FORDHAM	DATE JULY 22	

EXISTING RAFTERS TO BE ENHANCED OR REPLACED. SEE DETAILS ON SECTION A-A. & VIEW A1

150x90x24 UKPFC ENHANCEMENT BOLTED TO EXISTING LOWER PURLINS WITH M12 GR 8.8 BOLTS @ 400 CTS. @ ENDS PFC TO BE WELDED TO 10mm THICK END PLATE WITH 6mm F.W, END PLATES TO BE BOLTED TO ENHANCED PRINCIPAL RAFTERS WITH 4 No M16 GR 8.8 BOLTS THROUGH TO END PLATE @ OPPOSITE SIDE.



ENHANCED PRINCIPAL RAFTER.

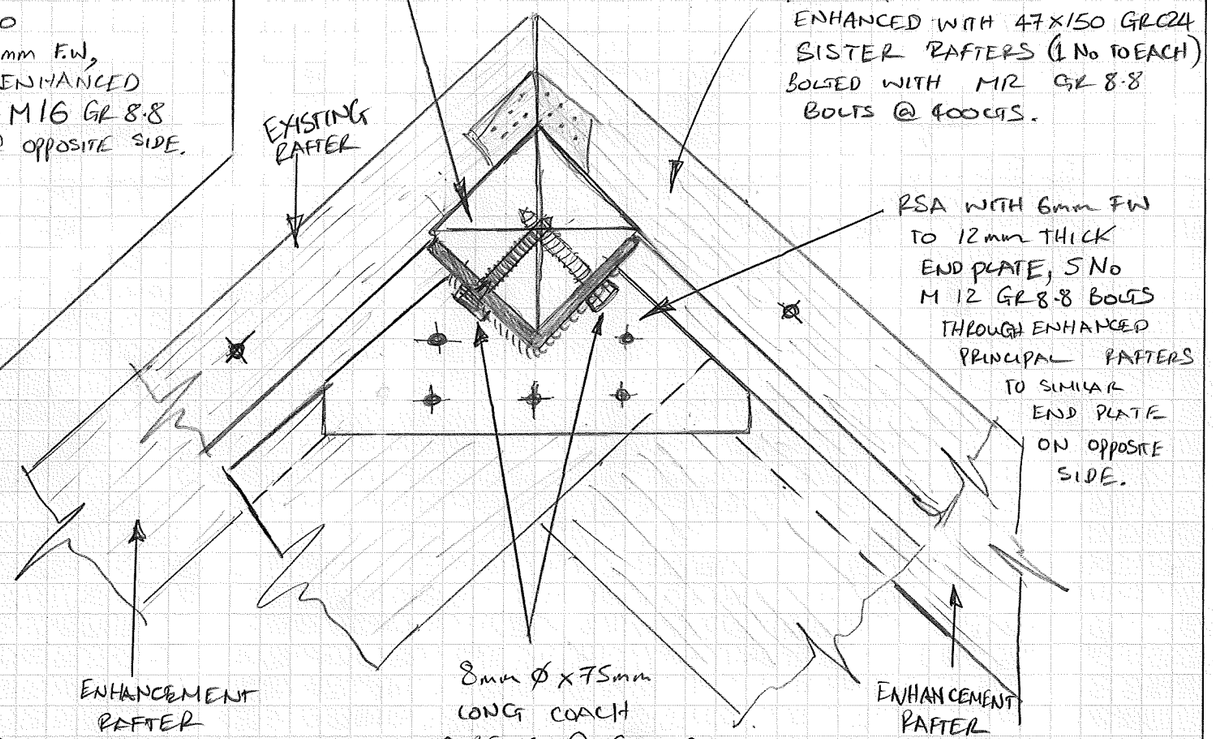
TIMBER WEDGES (SEASONED HARDWOOD) HOLDING EXISTING PURLIN FIRM INSIDE PFC. OR CONBEXTRA GROUT (FOSROC)

M12 GR8.8 BOLTS @ 400CTS.

DETAIL 1

NEW 120X120 C24 PURLIN FIXED TO 80X120X12 RSA

EXISTING RAFTERS ENHANCED WITH 47X150 GRC24 SISTER RAFTERS (1 No TO EACH) BOLTED WITH M12 GR 8.8 BOLTS @ 400 CTS.



EXISTING RAFTER

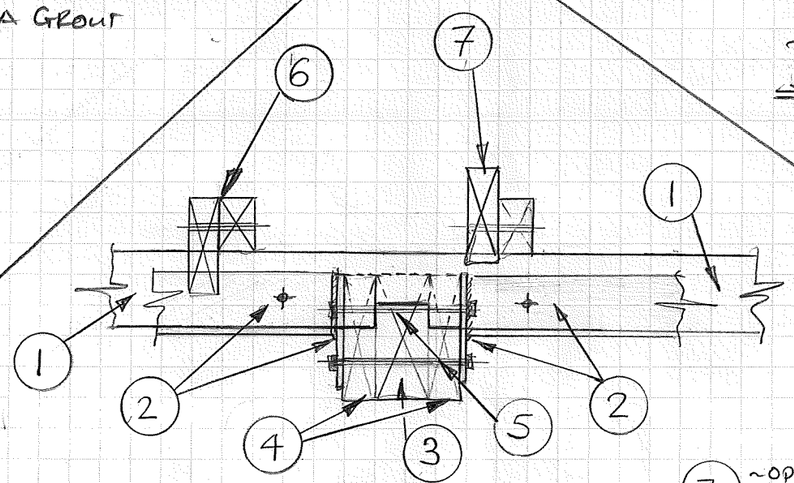
RSA WITH 6mm FW TO 12mm THICK END PLATE, 5 No M12 GR 8.8 BOLTS THROUGH ENHANCED PRINCIPAL RAFTERS TO SIMILAR END PLATE ON OPPOSITE SIDE.

ENHANCEMENT RAFTER

8mm Ø x 75mm LONG COACH SCREWS @ 600 CTS STAGGERED.

ENHANCEMENT RAFTER

DETAIL 2 (ONLY NECESSARY IF RAFTERS ARE RETAINED/ENHANCED WITHOUT NEW 47x150 GR C24 RAFTERS CANTILEVERING OVER LOWER PURLINS)



VIEW A1

1 ~ EXISTING LOWER PURLINS PROFILE UNCHANGED.

2 ~ PFC ENHANCEMENT AND END PLATE DETAIL AS DETAILED ABOVE IN DETAIL 1

3 ~ EXISTING PRINCIPAL RAFTER

4 ~ 47x195 GR C24 TIMBERS BOLTED EACH SIDE OF PRINCIPAL RAFTER AS ENHANCEMENT. TO BE NOTCHED AROUND EXISTING PURLINS.

5 ~ STAGGERED BOLTS OF PRINCIPAL RAFTER ENHANCEMENTS (M16 STAGGERED @ 300 CTS) / BOLTS OF PFC END PLATES - DETAILED ABOVE IN DETAIL 1.

6 ~ OPTION 1: ENHANCE EXISTING RAFTERS AS DETAILED IN DETAIL 2 ABOVE (ACHIEVING 150mm DEPTH FOR ROOF PROFILE) - THIS OPTION REQUIRES APEX PURLIN ENHANCEMENTS - AS ENHANCEMENT RAFTERS HAVE A SIGNIFICANT NOTCH

7 ~ OPTION 2: REPLACE OR ENHANCE EXISTING RAFTERS WITH 47x150 GRC24 SISTER RAFTER. IF REPLACED @ 400 CTS. NEW RAFTERS ARE TO CANTILEVER OVER LOWER (ENHACED PURLINS). THIS OPTION AVOIDS APEX ENHANCEMENTS.

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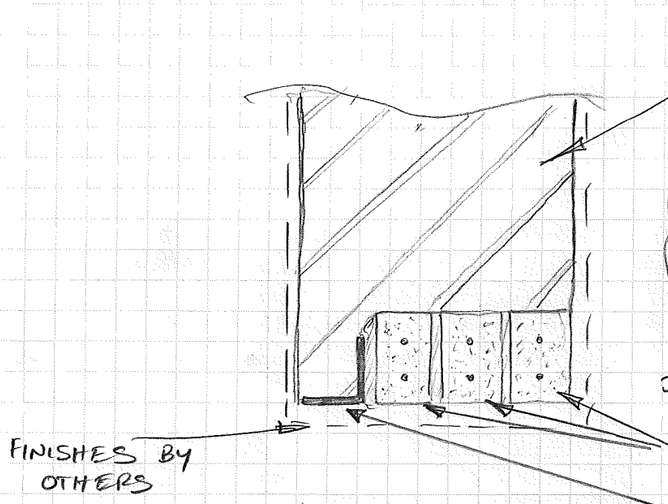
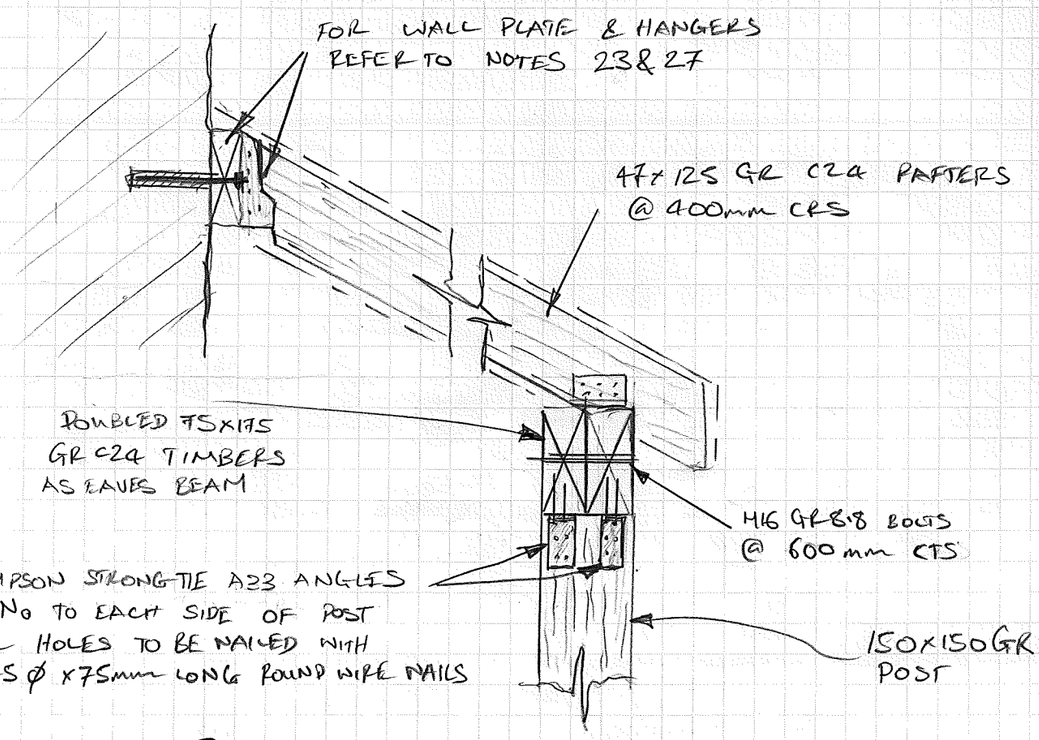
PROJECT UNDERDEAN HOUSE	JOB No. 22/103	SHEET No. D07
CLIENT MR C FORDHAM	DATE JULY 22	



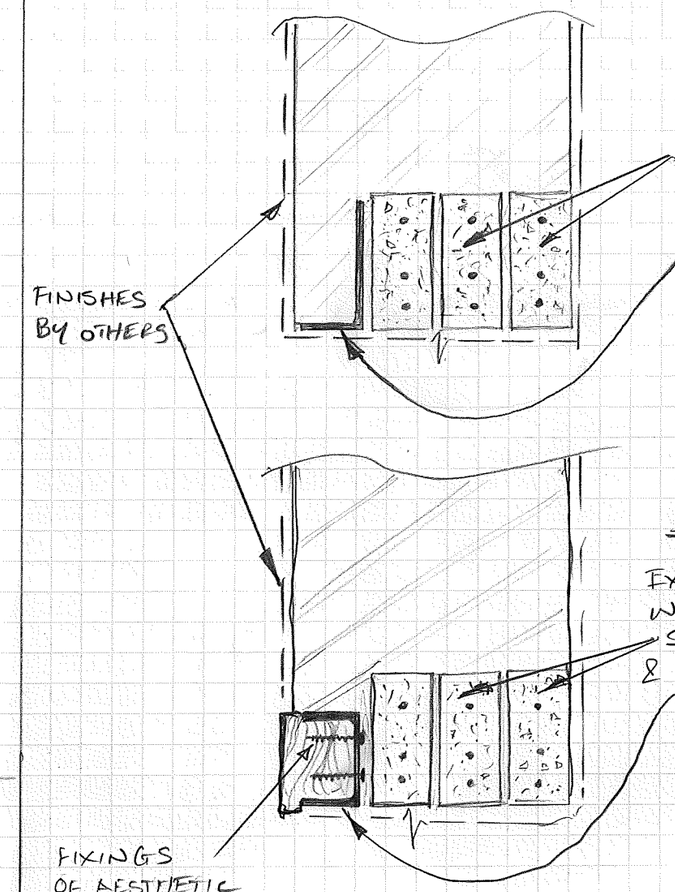
BUILDER TO ASSESS CONDITION OF EXISTING LINTELS & REPORT TO ENGINEER IF IN DOUBT IF THEY ARE TO BE RETAINED

IF EXISTING LINTELS REQUIRE REPLACEMENT ADOPT RISA 100x140 STRESSLINE PC LINTELS TO SUIT. & 90x90x8mm RSA

SECTION B-B



SECTION C-C



OPTION 1:

EXISTING LINTELS REPLACED WITH 100x215 HIGH STRENGTH STRESSLINE PC LINTELS TO SUIT. & 200x100x12mm RSA, 150mm BEARING @ ENDS ON NON-SHRINK GROUT

OPTION 2:

EXISTING LINTELS REPLACED WITH 100x215 HIGH STRENGTH STRESSLINE PC LINTELS TO SUIT. & 150x90x24 UKPFC LINTEL ALLOWING FOR TIMBER AESTHETIC LINTEL WITHOUT SHRINKAGE ISSUES

SECTION D-D

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PROJECT UNDERDEAN HOUSE	JOB No. 22/103	SHEET No. D08
CLIENT MR C FORDHAM	DATE JULY 22	

RAFTERS TO BE ENHANCED OR REPLACED. SEE DETAILS IN SECTION A-A & IN VIEW A1

EXISTING PRINCIPAL RAFTERS OF TRUSS ARE TO BE ENHANCED AS PER DETAILS IN SECTION A-A & VIEW A1

TRUSS BOTTOM CHORD

TIMBER PLATES BOLTED TO TOP FLANGE OF UBs WITH M12 GR8.8 BOLTS @ 400CTS STAGGERED.
(TIMBER WALL PLATE UNDER TRUSS TO BE SEASONED HARDWOOD)

SEE NOTE 27

2 No. 178 x 102 UB 19s

NEW 47 x 150 GR C24 RAFTERS @ 400CTS.

SECTION E-E

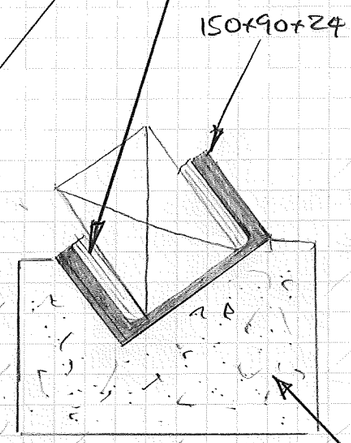
PADSTONE DETAILS:

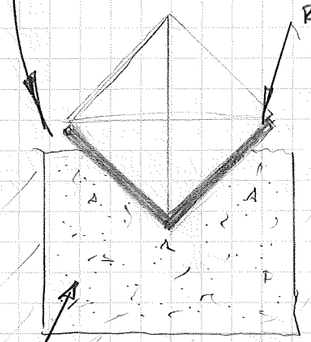
SEASONED HARDWOOD WEDGES OR FOSROC CONBEXTRA GP GROUT

150x90x24 UKPFC

DETAIL WON'T BE NECESSARY UNLESS APEX PURLIN IS ENHANCED.

120x120x12mm RSA.

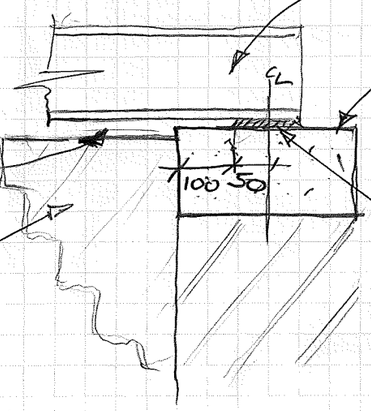




2 No. 178x102UB19S

300x300x140 DEEP CAST IN-SITU PADSTONE (GEN3 CONC)

CAST IN-SITU CONCRETE PADSTONES (MIN 100mm WIDTH), GEN3 CONCRETE, CAST AROUND STEEL PURLIN ENHANCEMENTS



GAP (NO BEARING HERE)

CORBELLED MASONRY MUST NOT BE RELIED ON FOR BEARING & CAN BE REMOVED FOLLOWING INSTALLATION OF NEW STRUCTURE

FOSROC CONBEXTRA GP GROUT TO MIDDLE 1/3 OF PADSTONE

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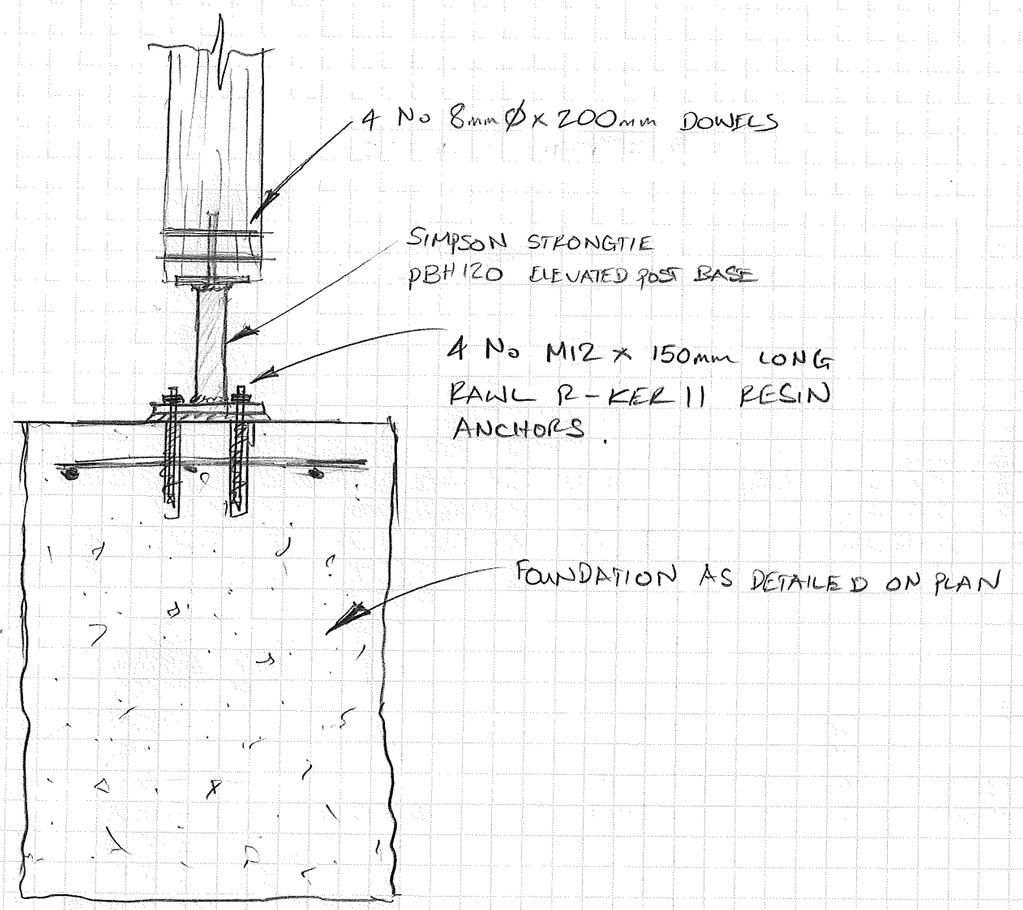
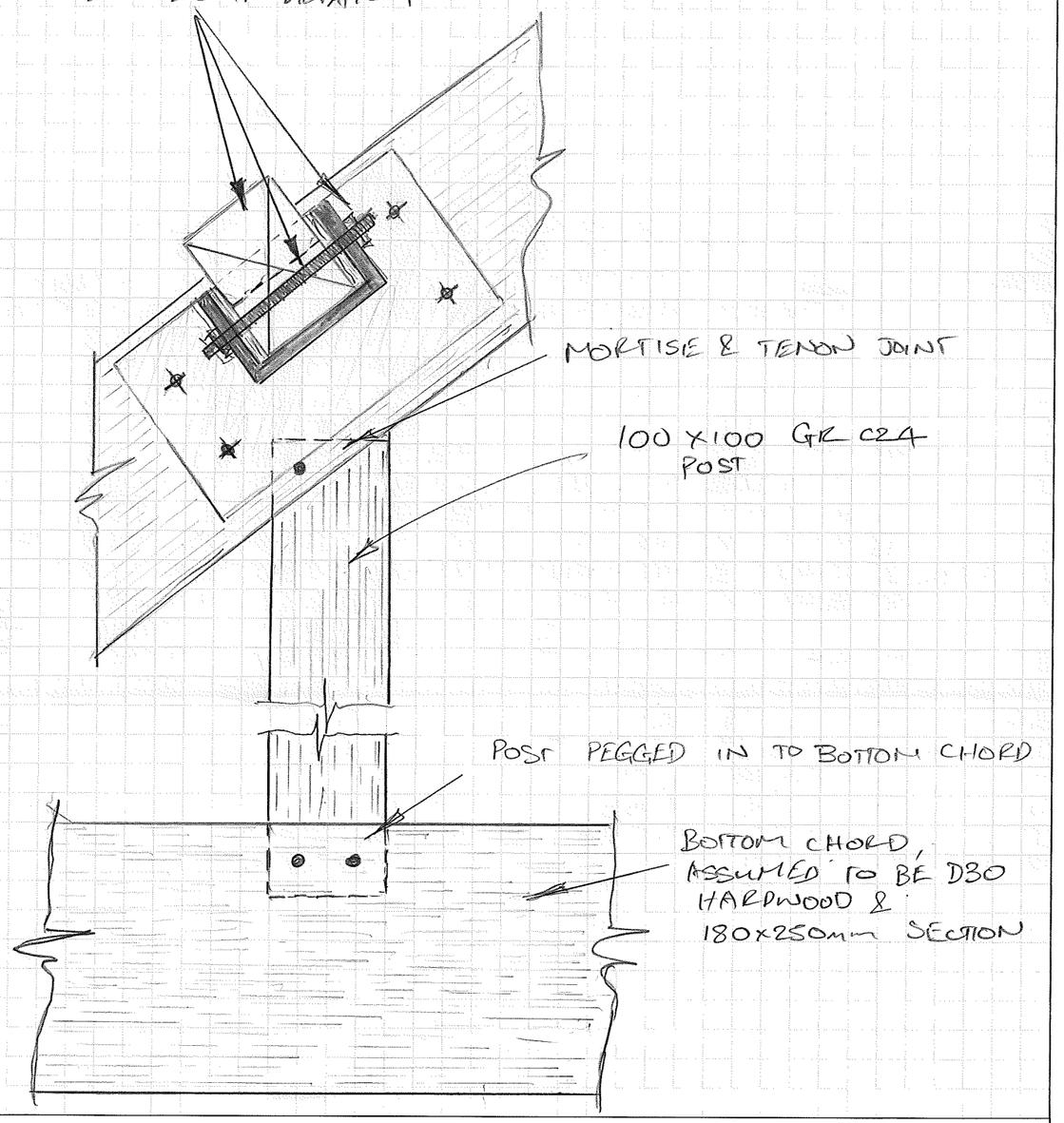
PROJECT UNDERDEAN House	JOB No. 22/103	SHEET No. D09
CLIENT MR C FORDHAM	DATE JULY 22	



ALTERNATIVE DETAIL TO AVOID ENHANCEMENTS TO PRINCIPAL RAFTERS OF TRUSS:

AS DETAILED IN DETAIL 1



GOODHIND
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PROJECT LINDERDEAN HOUSE	JOB No. 22/103	SHEET No. D10A
CLIENT MR C FORDHAM	DATE JULY 22	