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34 GRASSMERE WAY
WATERLOOVILLE
HAMPSHIRE
PO7 8RT

PROPOSED FRONT EXTENSIONS
AND
INTERNAL GF ALTERATIONS

STRUCTURAL INFORMATION

A4 PACK REV A P1-39

For: Mr and Mrs Poynton

Rev A
26/2/21
B. Regs
Approval
+
RENOVE

- 4 x A1 pdf
- A4 PACK P1-39
- SPEC P1-33
- CALCS P1-51

HEALTH & SAFETY CDM Regulations 2015

Anyone having construction or building work carried out has legal duties under the Construction (Design & Management) Regulations 2015 (CDM 2015), including domestic clients. A domestic client is someone who lives or will live in the premises where the work is carried out. It is the responsibility of all parties including domestic clients to familiarise themselves fully with the CDM 2015 Regulations. The HSE have provided information at :-

<http://www.hse.gov.uk/pubns/price/l153.pdf>

The domestic client must appoint a Principal Designer (usually the architect) and a Principal Contractor. PJDA will take on the role of a Designer under the regulations.

For domestic projects involving more than one contractor the principal contractor will normally take on the client duties and they will need to comply with these duties as well as their own. If the domestic client does not appoint a principal contractor, the role of principal contractor falls to the contractor in control of the construction phase of the project. The domestic client must write to the principal contractor formally transferring their duties under CDM.

As a result of a principal contractor taking on the client duties, the principal designer involved in the project will work with the principal contractor in their role as the 'client'. If the domestic client does not appoint a principal designer, the role of principal designer falls to the designer in control of the pre-construction phase of the project.

As well as complying with CDM 2015, all contractors must also comply with all other current Health & Safety legislation and the following Health & Safety Executive Approved Codes of Practice:-

- Management of Health & Safety at Work
- Managing Construction for Health & Safety

Standard Structural Notes (to be read in conjunction with P. J. Davies Associates Ltd. Drawings/A4 sketches and other general specification notes)

1. This structural information is to be submitted to and approved by Building Control prior to implementation.
2. These notes and the structural drawings and sketches are to be read in conjunction with the Architects drawings/specification. Any discrepancies are to be brought to the attention of the Engineer and Architect. Do not scale off the drawings. For dimensional queries, refer to Architect. All steelwork heights/levels/headrooms etc are to be verified by Architect & Contractor prior to commencement on site, call engineer to revise structure if required. The Architect is responsible for dimensional coordination of the project.
3. **The Client is to allow a contingency sum (say £10K) for any additional structure that may be required as project progresses to site and through to completion.**
4. Builder is responsible for agreeing any variations to architects elevations resulting from structure with Architect prior to ordering steelwork/timbers/ prior to construction.
5. Our role is structural only, we take no responsibility for planning permissions that may be required, the client is either to address these issues himself with the planners or preferably to employ architects etc for this purpose.

TIMBER

6. All timbers to be strength grade C24 unless noted otherwise, kiln dried, pressure impregnated preservative treated and free of splits, shakes and large knots. Timbers must be kept dry at all stages. Check that moisture content is less than 16% before fixing plasterboard and finishes. All cut, built in ends and joints to be given two further coats of Protim Solignum Cut End preservative on site. Any floor spans greater than 2.4m to have central row of solid noggins or herringbone strutting at mid span, also rows of solid noggins along perimeter ends to support chipboard edges. All double/triple timber beams to be well nailed together (3.75mm diameter galvanized nails at 150mm c/c staggered, or M10 bolted at 400c/c staggered with 3mm plate washers, or use Fasten master Timberlok screws at 300mm c/c). Minimum bearing for all timbers is 100mm. All oak timbers to be min grade B, and seasoned/air dried. Oak connections are to specialist oak suppliers details & design. Must use stainless steel nails/fixings in contact with any unseasoned oak. All chipboard floors are to be installed in strict accordance with manufacturer's instructions, (either glued & screwed approach or glued only approach) to avoid squeaky floors. Drill holes/notching for services in timber joists to be in strict accordance with A4 sketch (see attached sheet). Note, wane is not permitted at bearing positions of any timbers. Provide min 40mm clear gap off chimneys when trimming around.
7. All wallplates to be 50 x 100 C24 treated softwood timber bedded on mortar, in min 3m lengths lap jointed. Strap all roof eaves wallplates down with BAT galvanized 30x5 straps 100/1200 min 10 no 10 screws in lower leg. Straps at max 1.5m c/c. 30 x 5 BAT straps also to be provided at max 1.5m c/c around perimeter of any new first floor areas to tie walls to floor, use min 100/1200. Notch straps into top of first floor joists. Nog out at strap locations where wall is parallel to the span of the floor joists. Noggins to be min 2/3 depth of floor joists & tightly fitted. Also add BAT straps around full perimeter of any gable end walls at 1.5m c/c, use noggins etc, to tie gable walls into roof and ceiling structures.
8. Joist hangers to be by Simpson Strong Tie (or Cullen) only. Install hangers in strict accordance with manufacturers recommendations. Where type/reference of hanger is not given on structural drawings, builder is to check any heavily loaded hanger specs with structural engineer for approval prior to purchasing, so that Safe Working Load of hanger can be checked against design loading etc. Unless manufacturer specifies differently use 30mm x 3.75 dia square twist sheradized nails – nail all holes.
9. For all cut timber roofs, all timber to timber connections to be M12 bolted. Use 40 x 3 plate washers and use Nylok nuts. Provide tooth plate connectors also if indicated on structural drawings. Roof battens sizes to tile manufacturers recommendations, fixed to BS 5534.
10. All flat roofs to be sheathed in min 18mm WBP ply. Ply to be laid in staggered sheets all edges & joist lines nailed at 150mm c/c to form a rigid diaphragm. Strap flat roof back to main house wall using BAT 30x5 straps 100/1000 at 750mm c/c.
11. All ground & first floor studwork walls to have edge stud M10 rawlbolted to outer masonry walls at 300c/c, so studwalls provide buttressing to outer cavity walls.

12. All roofing/cladding etc is to be fixed in accordance with manufacturer's instructions.
13. Builder is responsible for coordinating with structural engineer to ensure any handrailing/balustrading that is to be built has been approved/designed by the structural engineer for the necessary horizontal loadings to BS6399. Do not build any balustrading/balcony railings without prior design & approval from structural engineer.
14. Builder to open up existing floors where building new stair flights off, and agree structure for stair support with engineer.
15. All timber floor finishes to be installed with min 10mm perimeter gap all round, to be in accordance with manufacturers recommendations.
16. To all floor joists provide herringbone strutting:- Span <2.5m no strutting reqd, span 2.5-4.5m one row strutting mid span, >4.5m span 2 rows strutting equal spacing. Also provide row of solid noggins between joists at ends of spans just inboard of outer walls – all perimeters.

STEELWORK

17. All steelwork to be grade S355JR hot rolled unless noted otherwise. All steelwork to be shot blasted and painted off site with 2 coats high build zinc phosphate primer. Any steelwork with faces into cavities to have those faces painted on site with 2 additional coats of heavy duty bitumen paint. All steelwork closer than 40mm to cavity face of outer leaf brickwork, or externally exposed to be hot dip galvanized 85 microns thickness.
Bolts to be min M12 grade 8.8 CE marked zinc plated
18. All pairs of steel beams to be M12 bolted together at 800 c/c, use steel tube spacers. Each steel to be centred on centreline of the leaf of wall it is supporting. Bolt all steel beams to padstones using 2 M10 resin anchors min 80 pen into padstone. Strap all padstones down to walls using min 2 No BAT 30x5 100/1500 straps use min 10 No 10 screws in each long leg. (Unless actual detail is given in calcs, then use detail given)
19. Any steelwork below ground is to be concrete encased with RC40 concrete, +100mm all round, D49 wrapping fabric 50mm cover. Encase up to underside of ground floor.
20. All steelwork connections to be designed and detailed by the fabricator to the loads indicated (if none shown, assume = 75kN) Provide min 4 M12 8.8 bolts. Steel fabrication drawings should be forwarded to the engineer and architect for checking at least 7 working days before commencement of fabrication. Beams to have min 100mm bearing onto padstones/spreader plates. All welds to be 6mm fillet welds unless notes otherwise, to be carried out by a qualified & coded welder.
21. Beams are to bear only onto loadbearing walls with adequate foundations. Padstones to be 440x100x215 dp C30 concrete unless noted otherwise, bed padstones using stiff 1:3 mix mortar.
22. Padstones to be RC30 concrete, mass concrete foundations to be GEN3 (20N), reinforced concrete foundations to be RC 40, concrete encasement to be RC40, cavity fill to be GEN 1.
23. **The principal contractor is responsible for the design and installation of all temporary needles, props, bracings etc to provide adequate temporary support and stability to the structure during the works. The principal contractor must allow in tender for commissioning a suitable temporary works design to be carried out by a suitably qualified and experienced engineer who is insured to undertake temporary works designs.**
24. Fireproofing is all to architects specification & details.
25. All 'MAN-SAFE' Systems and Anchor Points are to be designed by the contractor

MASONRY

26. Blockwork below ground to be fully dense 7N concrete blocks, or use Class B 50N engineering brickwork. Standard mortar mix below DPC to be 1:0.5:4 cement:lime:sand. Above DPC standard mortar to be 1:1:6. Do not lay in temperatures below +5 degrees Celsius.
27. Wall Constructions:- For Brick Cavity walls, Outer leaf to be 102mm min 10N frost resistant brickwork. Cavity width refer to Architects drawings. Blockwork inner leaf to be 100mm 3.6N lightweight block above DPC unless noted otherwise. Block bond all corners/returns, but not internal wall junctions (see note 12). **All internal loadbearing walls to be 7N blockwork.** Provide proprietary head restraint ties at 900mm c/c to all internal walls.
28. Cavity wall ties to be Ancon stainless steel RT2 ties length to ensure min 50mm embedment into both leaves of cavity wall. Provide ties at 450mm vertical centres and 750mm horizontal centres generally, but 225 c/c vertically to sides of door/window openings etc. Also, all internal blockwork walls are to be tied to the external walls using open ended wall ties at 225c/c.
29. Provide 15mm brick movement joints in outer leaf where indicated on the plan/ at junctions between new/existing. Provide additional wall ties at 225c/c each side of joint. Use foam strip

42. Client is to refer to structural engineer for advice prior to carrying out any new planting of trees/hedges or removal of trees in vicinity of new extension, to avoid any future subsidence to foundations.
43. Builder to provide for basic radon gas protection. Provide a 1200g (300 micron) radon gas membrane under floor slabs lapped 300mm double welted and taped with gas proof tape at joints & service entry points, carry membrane over cavities, all to architects or specialists details,

PARTY WALL SERVICE

44. Party Walls – Any alterations/additions to structural loads that are shown added to a party wall or excavations within 3m of the neighbour may require a party wall notice letter to the neighbours etc, and agreement with neighbours should be achieved prior to builder confirming costs to client or ordering any steelwork/timberwork. This Party Wall service is not included in our fee. We can provide this service for an additional fee, please contact us to discuss. The first structural proposals may change pending the result of the party wall arrangements. Any changes to the structural design required as a result will usually be charged at hourly rate. It is the responsibility of the property owner to ensure that all requirements of the Party Wall Act are complied with.

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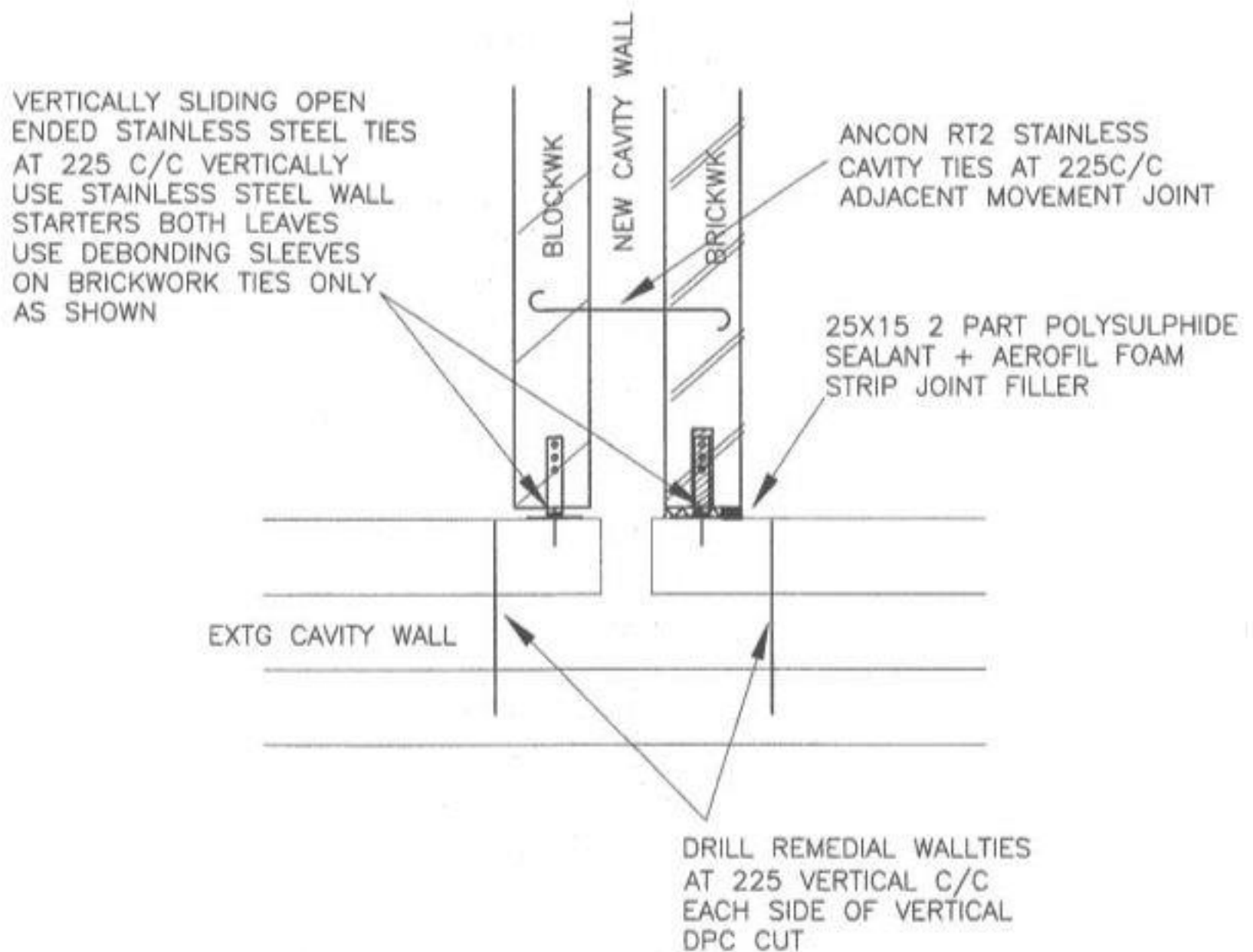
- Management of Health & Safety at Work
- Managing Construction for Health & Safety

6.

METHOD STATEMENT

INSTALLATION OF BEAMS IN EXISTING WALLS

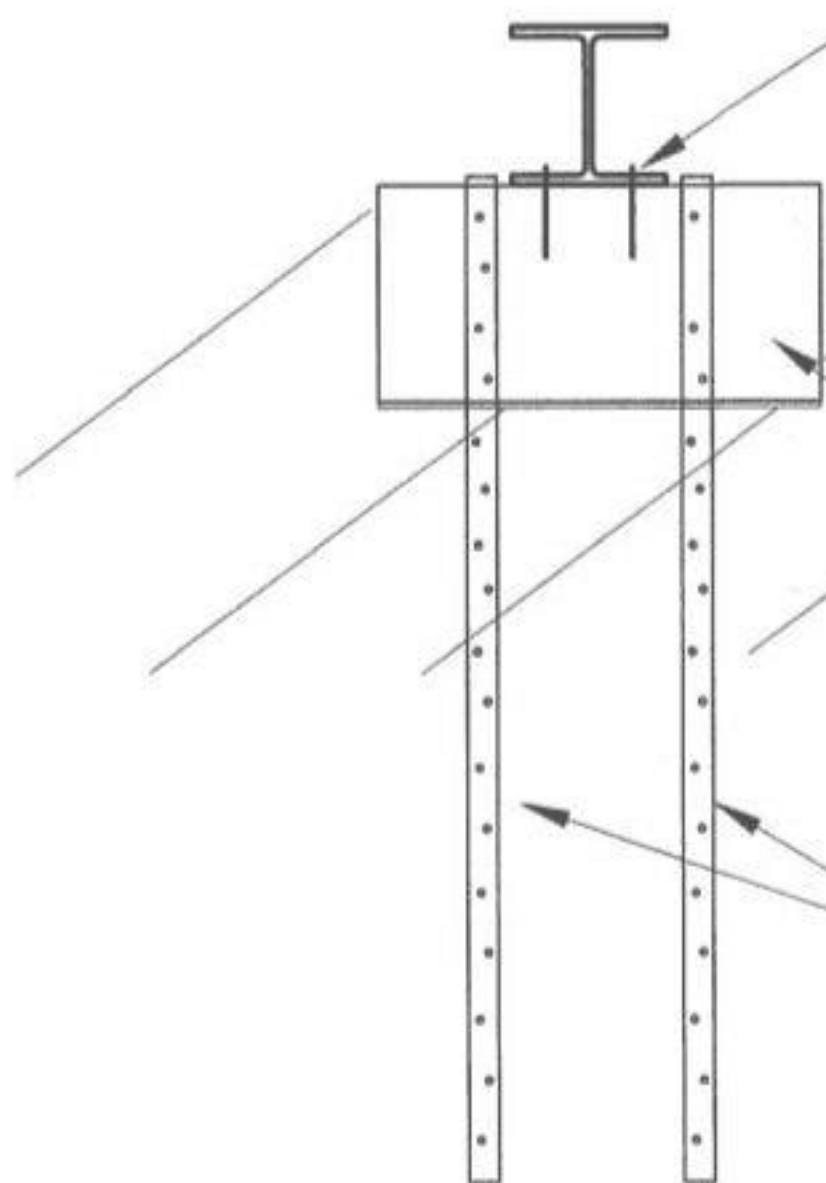
- 1 Work to site dimensions only.
- 2 Full consideration is to be given to all other structural drawings, specifications and associated architectural drawings when planning temporary works etc.
- 3 Site dimensions are to be taken by the contractor to ensure that assumptions made on the drawings and calculations comply with the site situation.
- 4 Set out opening and beams etc (allowing 30 mm for packing from top surface of beam).
- 5 Install suitable temporary works (the contractor is responsible for all temporary works and stability of the buildings and adjoining structures during the course of the works).
- 6 If needles are to be used, these are to be of a suitable approved steel section, positioned above the proposed new beam. Needles are to be installed at suitable centres and be of a designed section size, all approved by the engineer. Pockets for needles shall be cut true and square. The upper surface of the needle shall be in full contact with the brickwork or other walling over. If there is an irregular surface, allowance should be made for suitable high strength mortar, wedging or the like.
- 7 Supporting scaffold/propping is to be fully braced and tied with additional raking scaffold to assist stability of the works over as necessary.
- 8 Scaffold/prop base plates should bear on suitable sole plates and the ground underneath should be checked and approved for bearing capacity.
- 9 Scaffolding should be continuous through timber floors and not supported directly on them.
- 10 Once the needles and temporary supports are fully tightened, in position and all loads over are safely carried, the new opening can be carefully cut out with absolute minimum disturbance to the existing structure and support.
- 11 If new foundations, piers or columns and /or padstones are required, these should be constructed as quickly as practicably possible. New foundation works should have the formation approved prior to casting.
- 12 Work to be bonded in to existing as required.
- 13 Construct brickwork piers and foundations and/or padstones as necessary. These should be allowed to 'Cure' for at least 3 days before the beam is installed.
- 14 The beam should be installed to true line and level, having due regard for future finishes etc. After installation, the space between the top surface of the beam and the walling over should be tightly filled with 1:3 cement mortar, hammered into the 30 mm gap between beam and walling over. Any loose brickwork is to be removed and rebuilt in engineering brick, with pinning in cement mortar to be undertaken 3 days after these engineering bricks have been laid. To ensure full load take-up, slate or steel wedges may be used, hammered into the 1:3 mortar.
Cebex 100 by Foxroc
- 15 The 1:3 mortar mix shall be 1 (cement), 3 (Sharp sand), plus shrink proof additive such as ~~cebelex~~ or the like. Water content should be such that the mix is consistent and 'ballable' without being over wetted.
- 16 Throughout the propping, formation of opening, pinning and subsequent reinstatement works, the whole building shall be continually monitored for signs of movement or distress.
- 17 Once pinning has been in place for a minimum period of 3 days, props and needles may be carefully removed.
- 18 Holes where the needles were once positioned, should be infilled with brickwork and cement mortar hammered in as above.
- 19 Prior to completion, make good all disturbed surfaces, corrosion protect and fire protect beam as required, clear away, decaffate and clean up.



BRICK MOVEMENT JOINT DETAIL (TYPICAL)

(1:10 at A4)

BOLT STEEL TO PADSTONE
USING M10 HILTI RESIN ANCHORS
80mm PEN INTO PSTONE

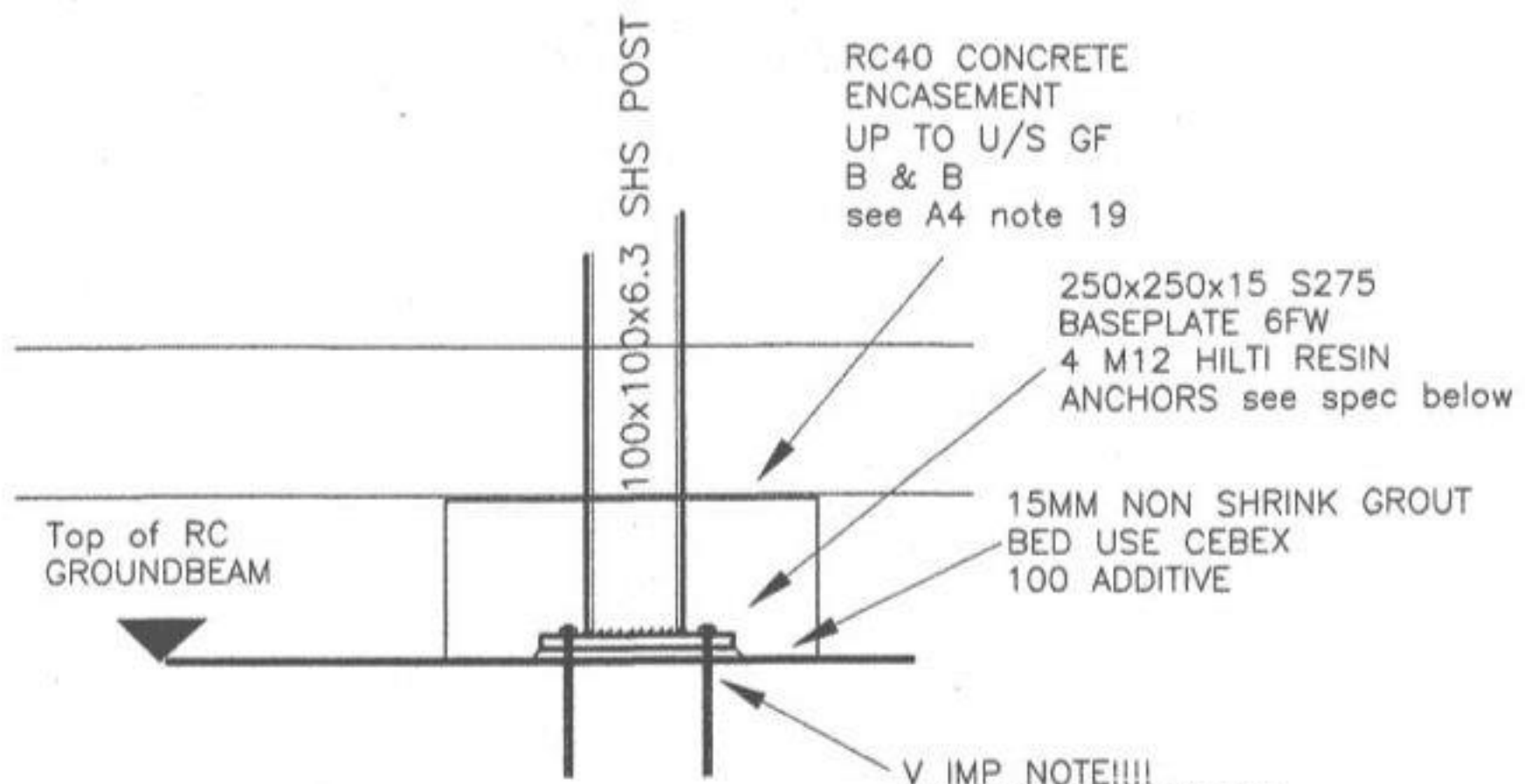


P2 PADSTONE
440Lx100Wx215dp
C30 CONCRETE
on 1:3 stiff mortar bed

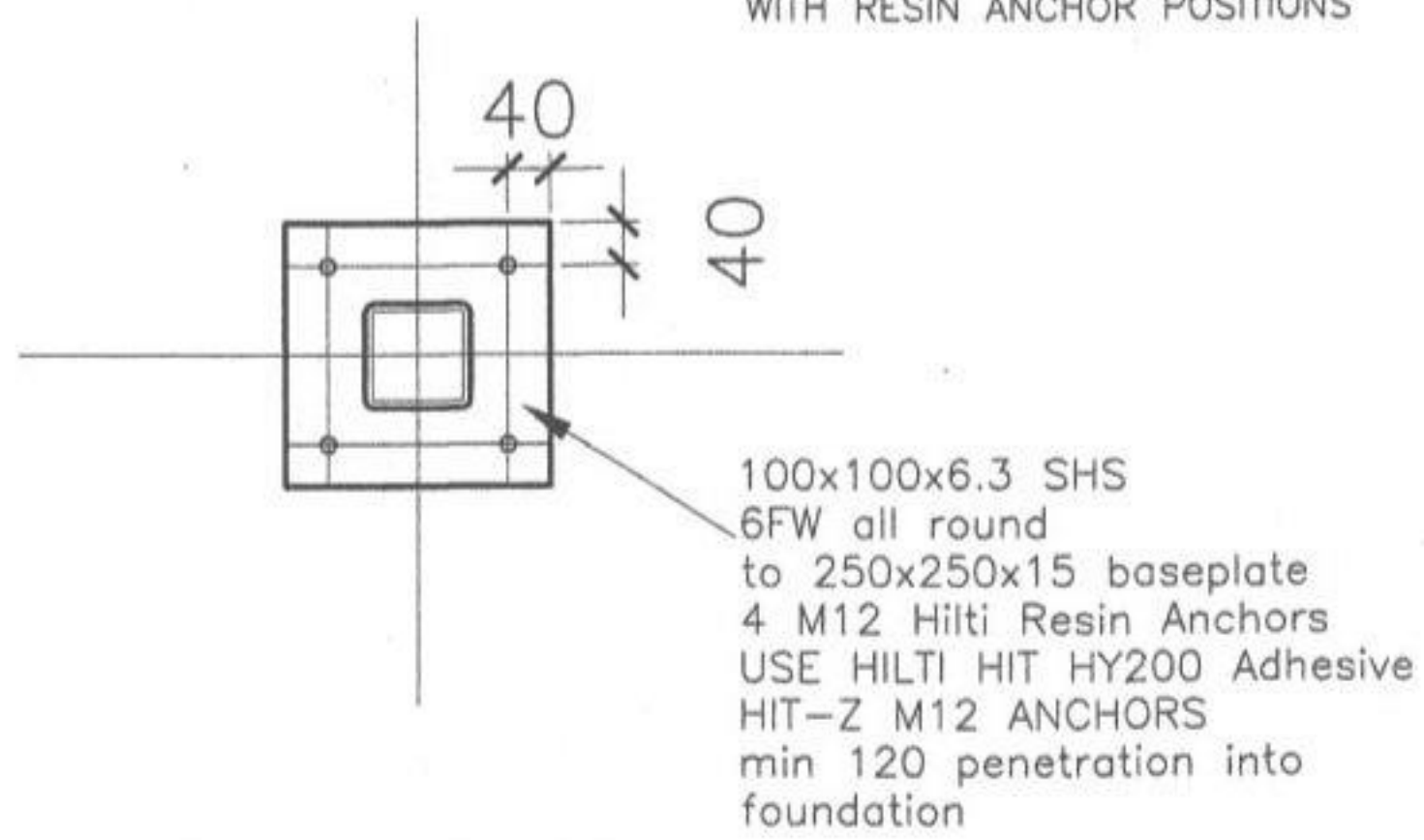
2 BAT 30x5 1000/100
galv anchorage straps
FIXINGS PER STRAP
LONG LEG 8No 10 galv screws
TOP 4No 10 galv screws into padstone

BOLT ALL STEELS TO PADSTONES

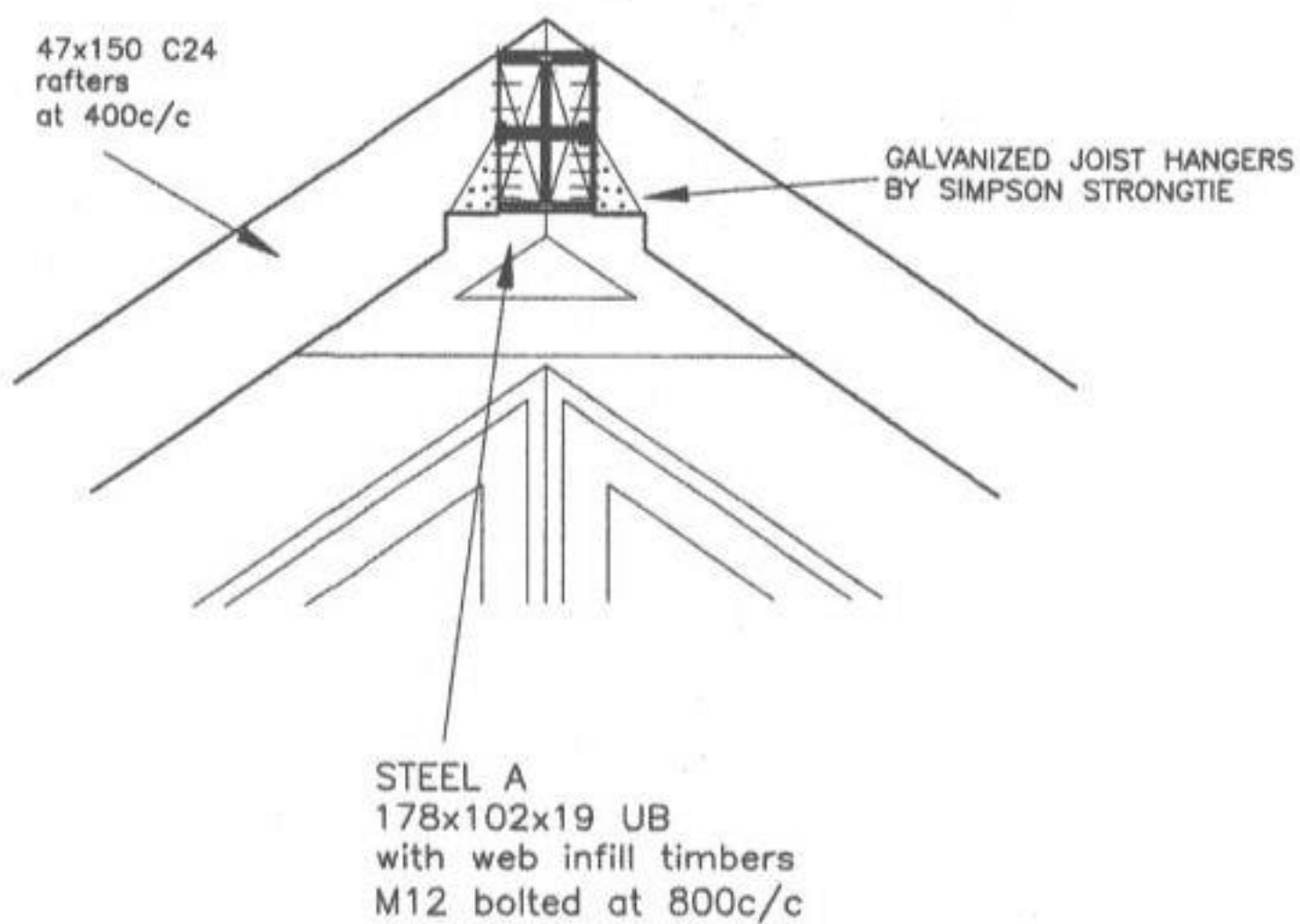
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V IMP NOTE!!!!
ADJUST GROUNDBEAM
TOP REBAR & LINKS PRIOR
TO POURING TO ENSURE
WHEN DRILLING FOR RESIN
ANCHORS AFTER POUR
THAT NO REBAR CLASHES
WITH RESIN ANCHOR POSITIONS

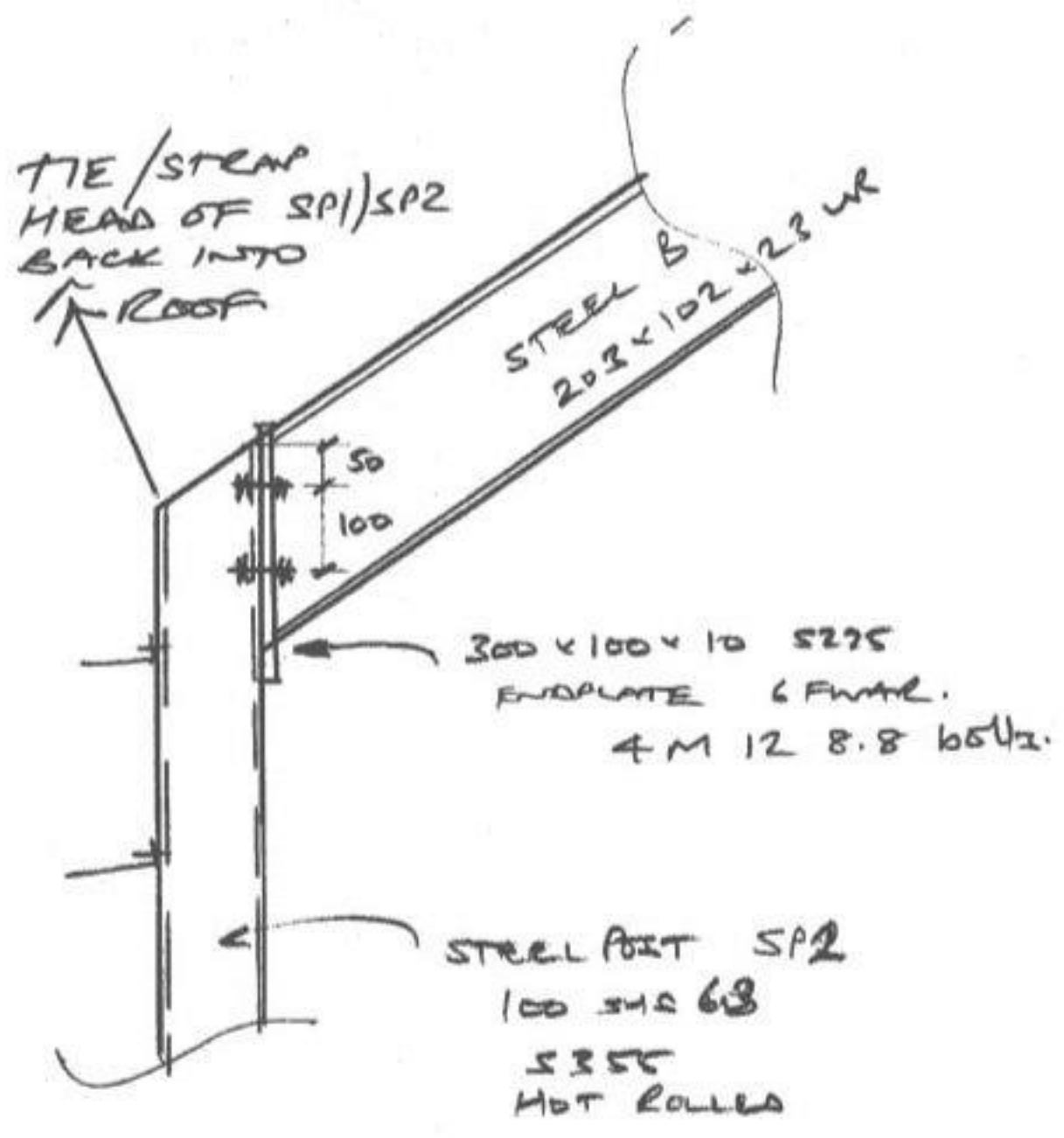


POSTS SP1 SP2
BASEPLATE DETAILS (1:10 at A4)



RIDGE DETAIL
STEEL A

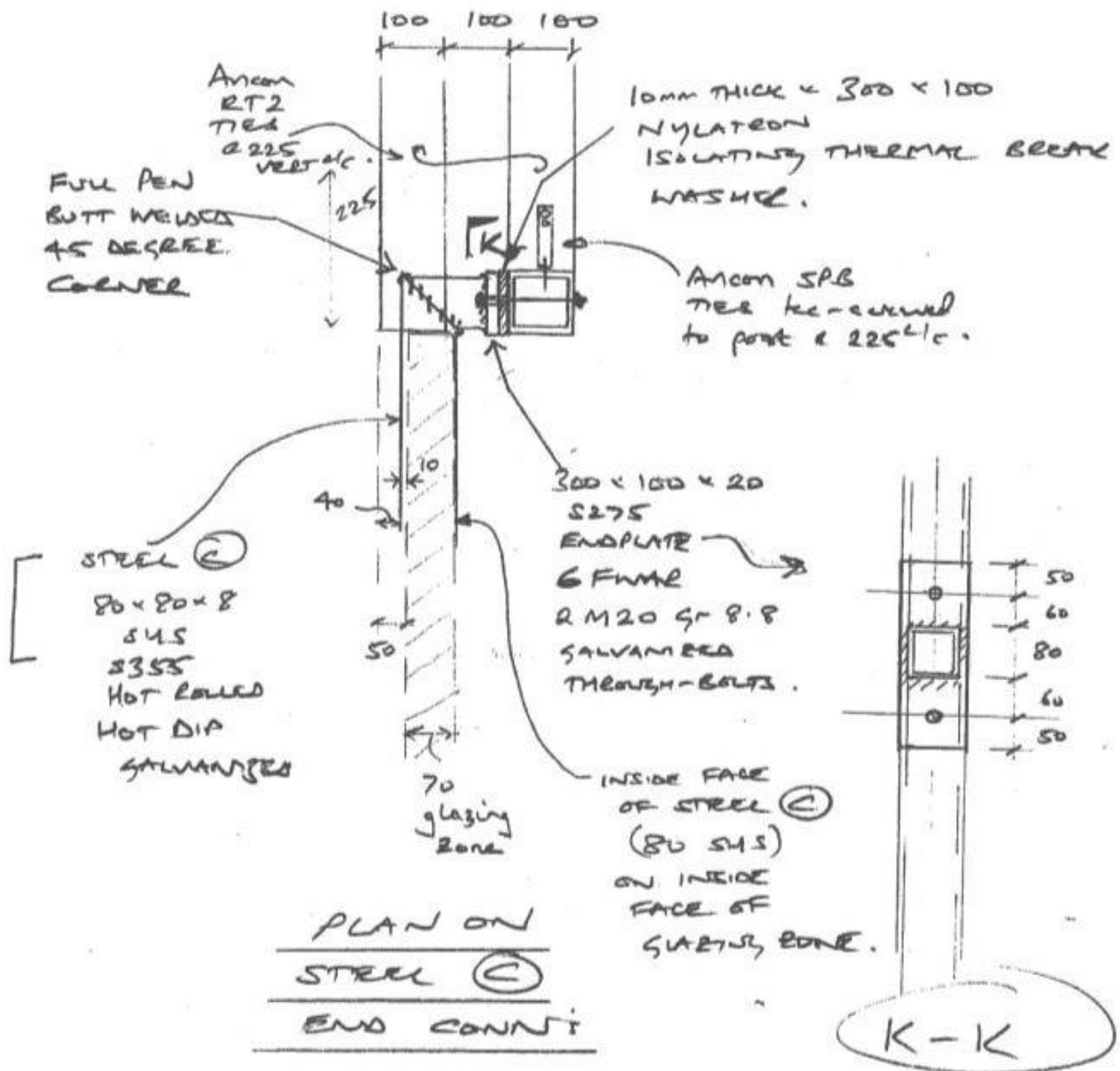
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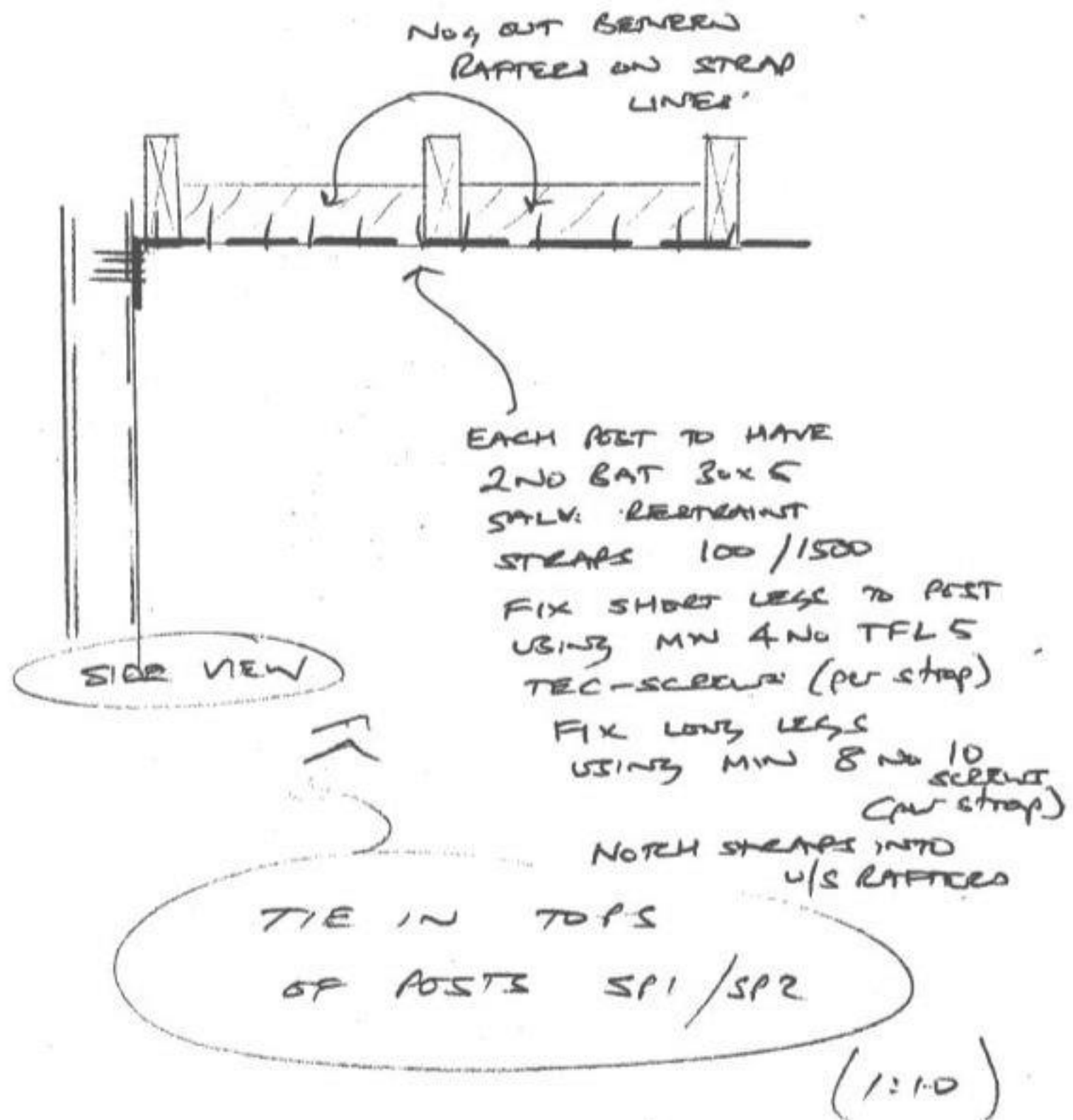
STEEL (B)
TO POSTS SP1 / SP2

(1:10)

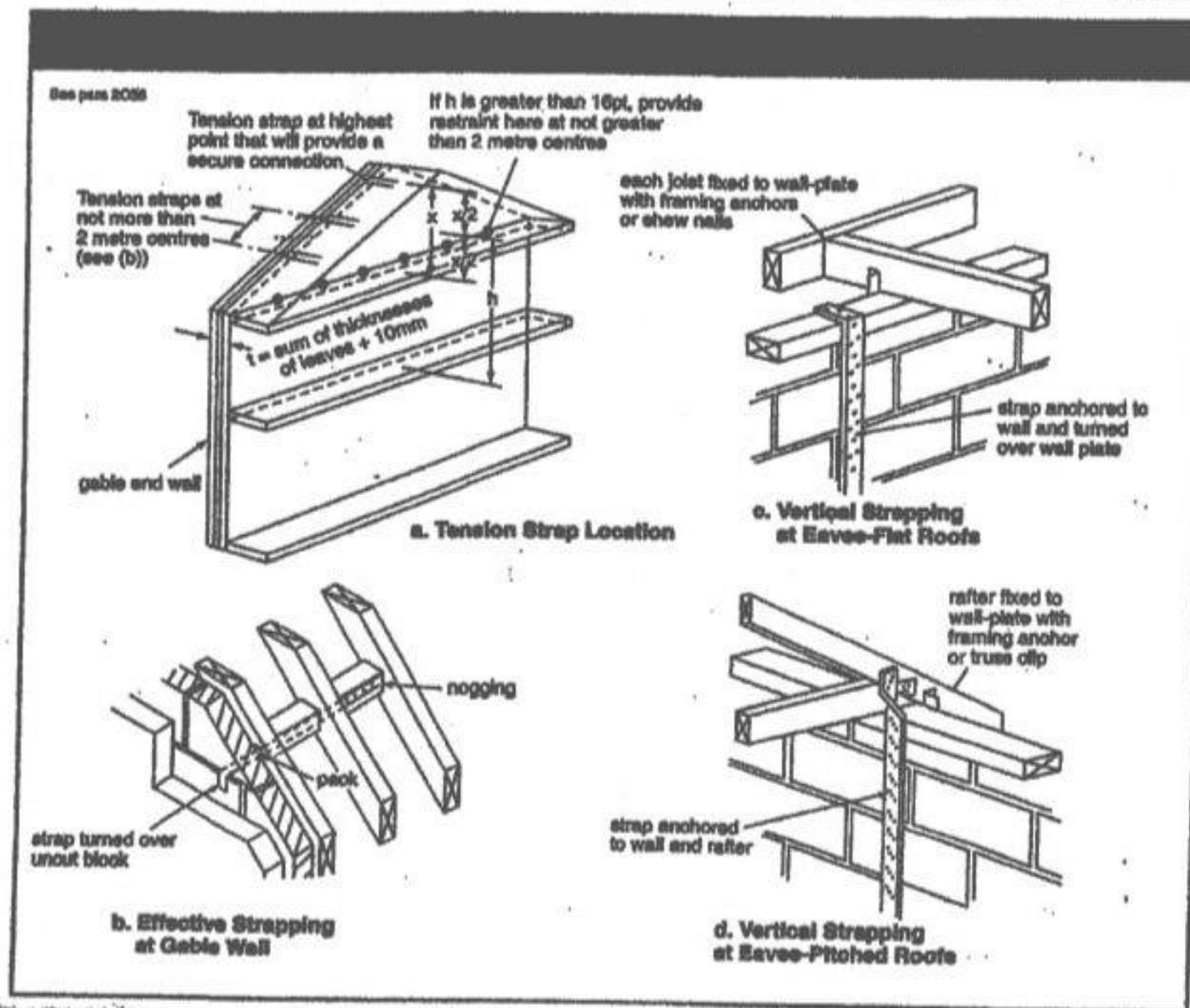
Project Title: 34 GRASEMER WAY.		Project No:		
Calca. by: PD	Prelim./Final	Checked by:	Category of Check:	Sht.
Date:		Date:		



Project Title:		Project No:		
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Date:		Date:		

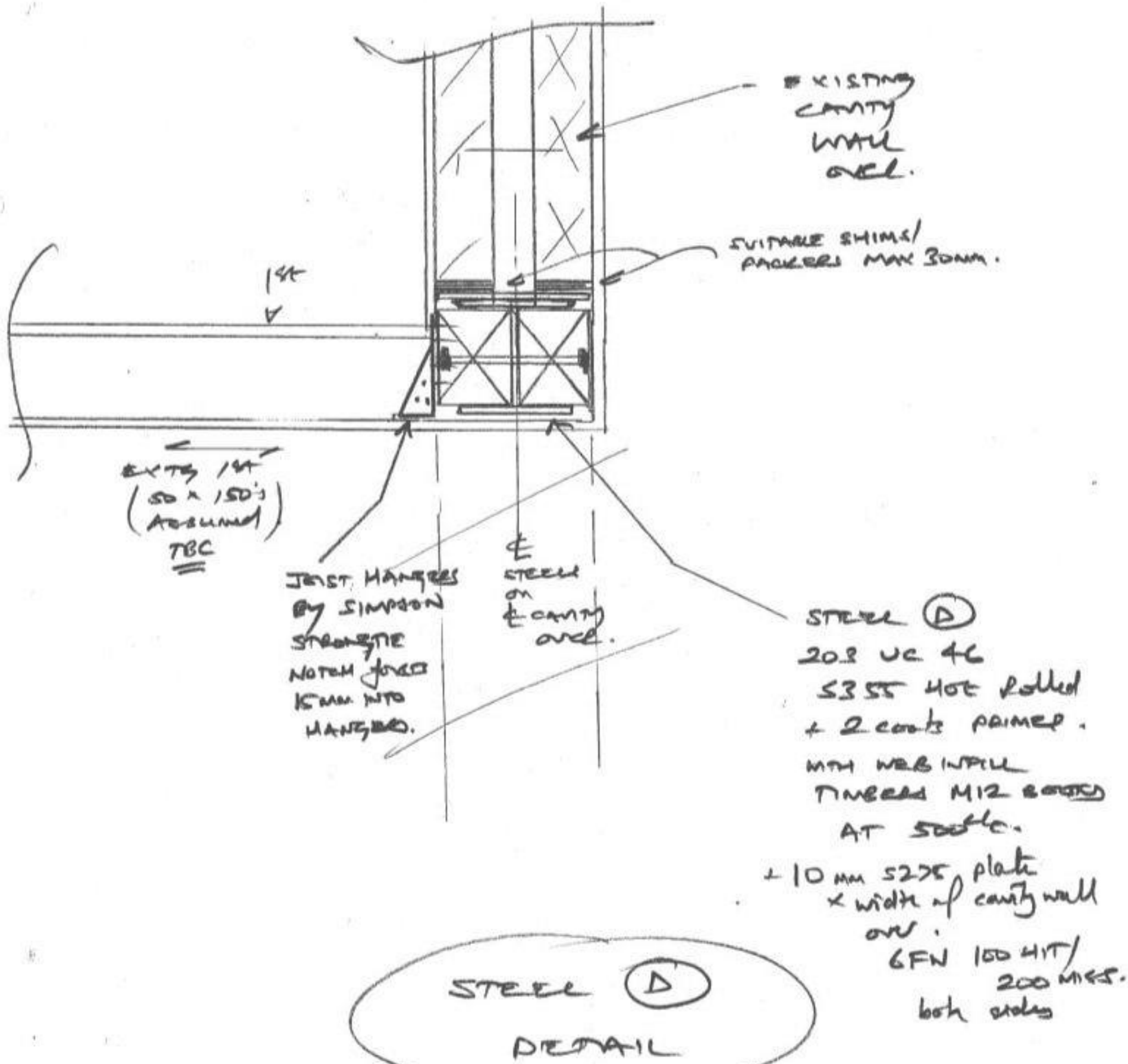


A1/2 SIZES OF STRUCTURAL ELEMENTS



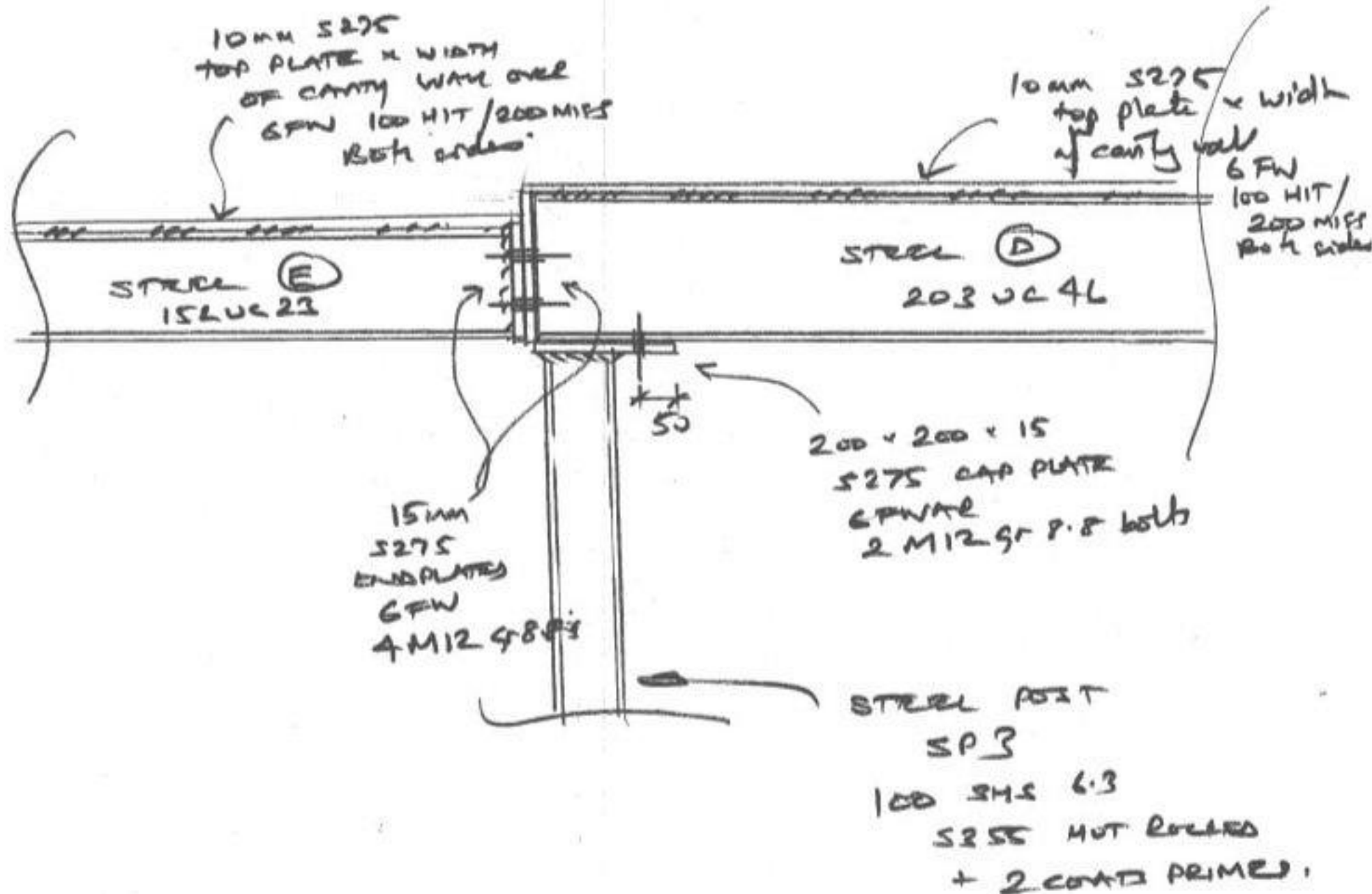
STANDARD
STRAPPING
DETAILS

Project Title: 34 GRADENERE WAY			Project No: 1566		
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(1:10)

Project Title: 34 GRADSHIRE WAY		Project No: 1566		
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Date: //		Date: //		

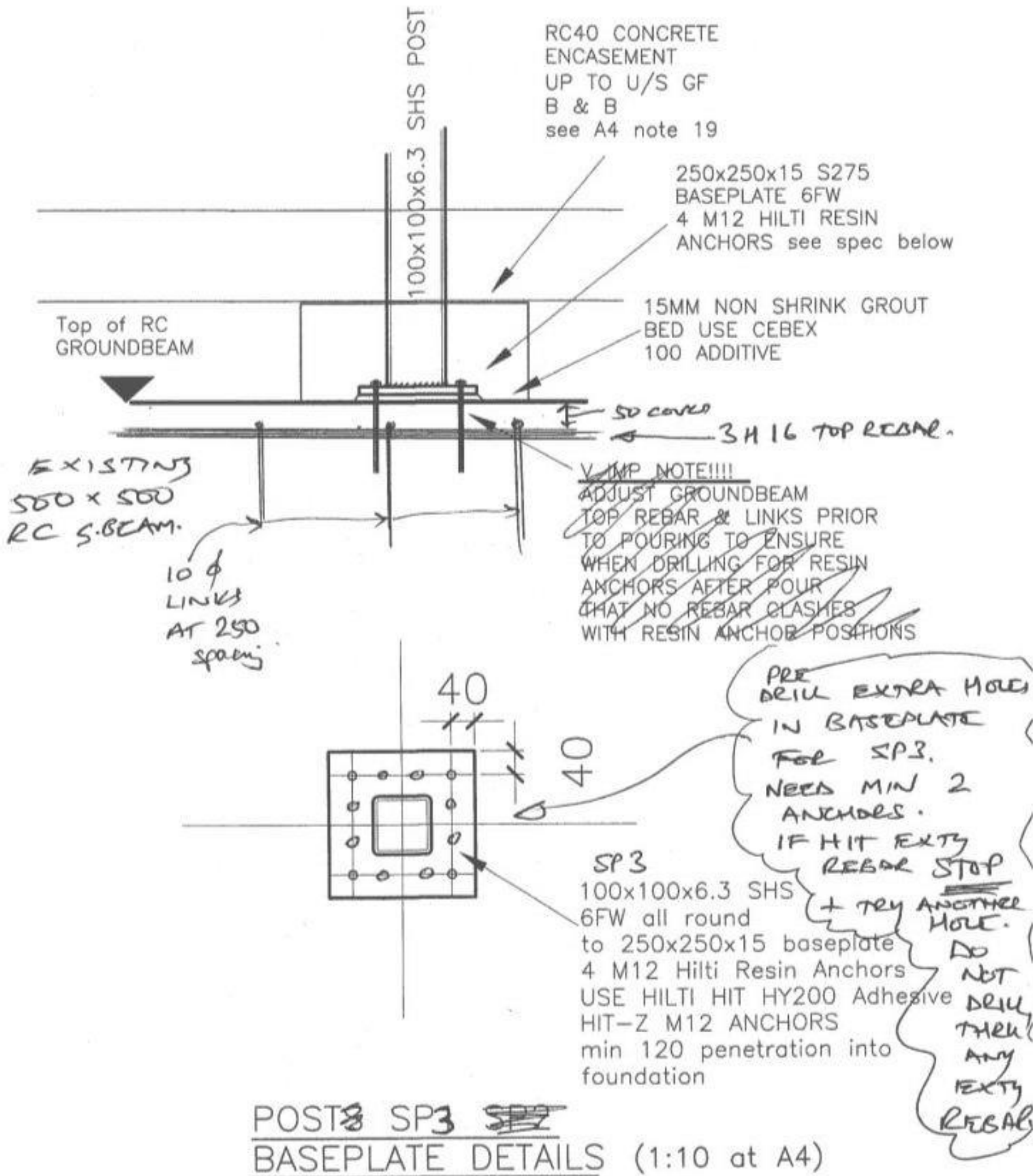


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STEELS D / E / POST SP3

TOP DETAIL

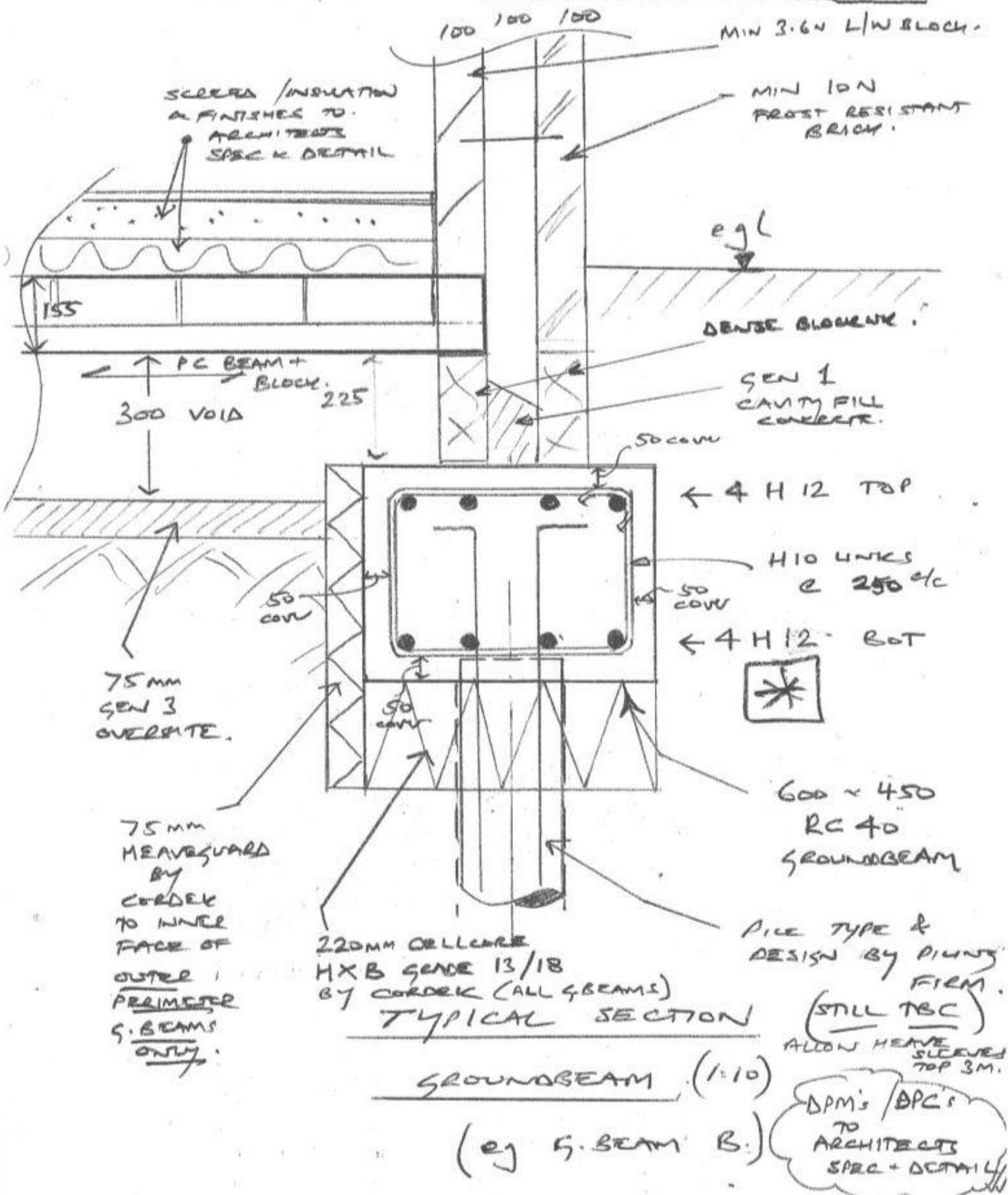
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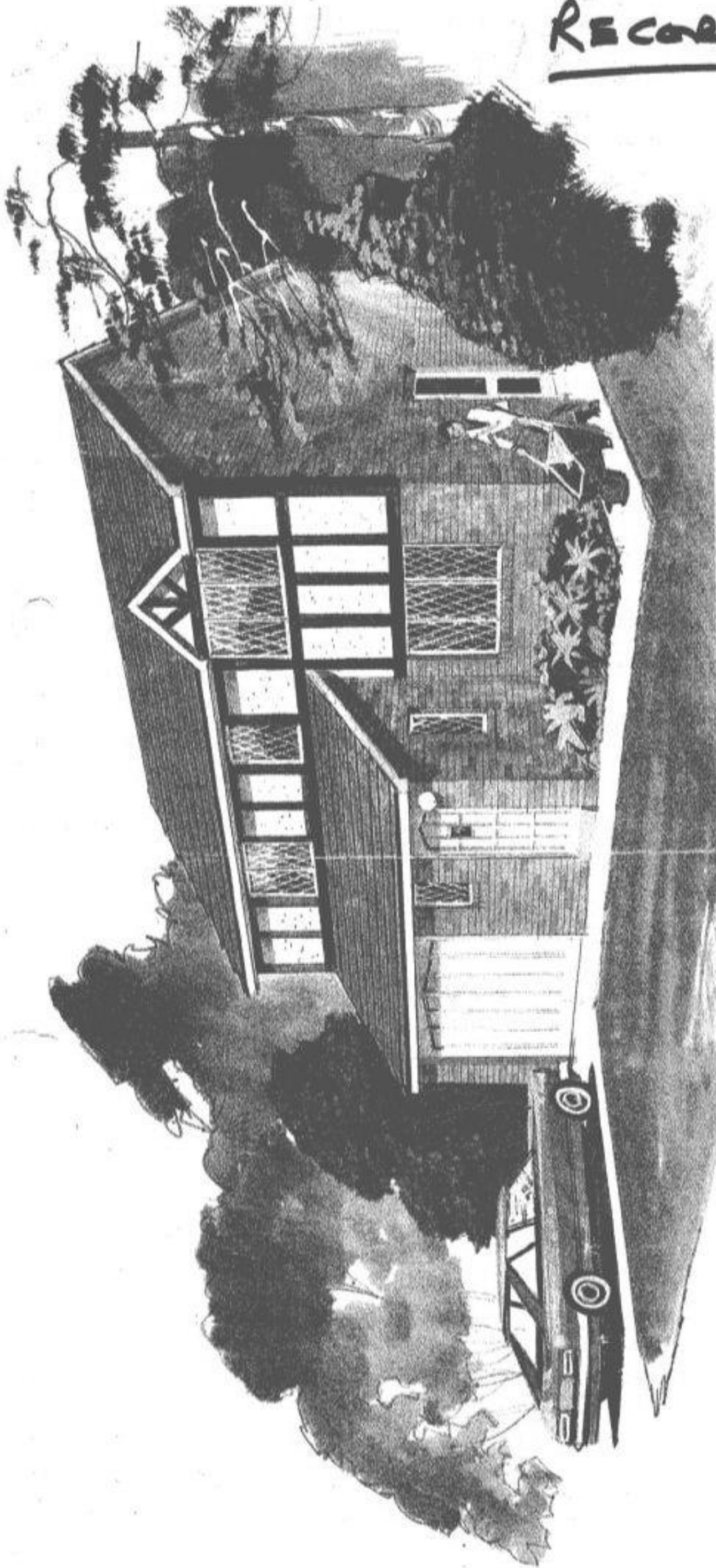


PJDA WILL PROVIDE
BAR BENDING SCHEDULE
IN OUR COURSE.

18

Project Title:		Project No:			
Calca. by: /A	Prelim./Final	Checked by: /	Category of Check:	Sht	
Date: /	/	Date: /	/		





The Marlborough

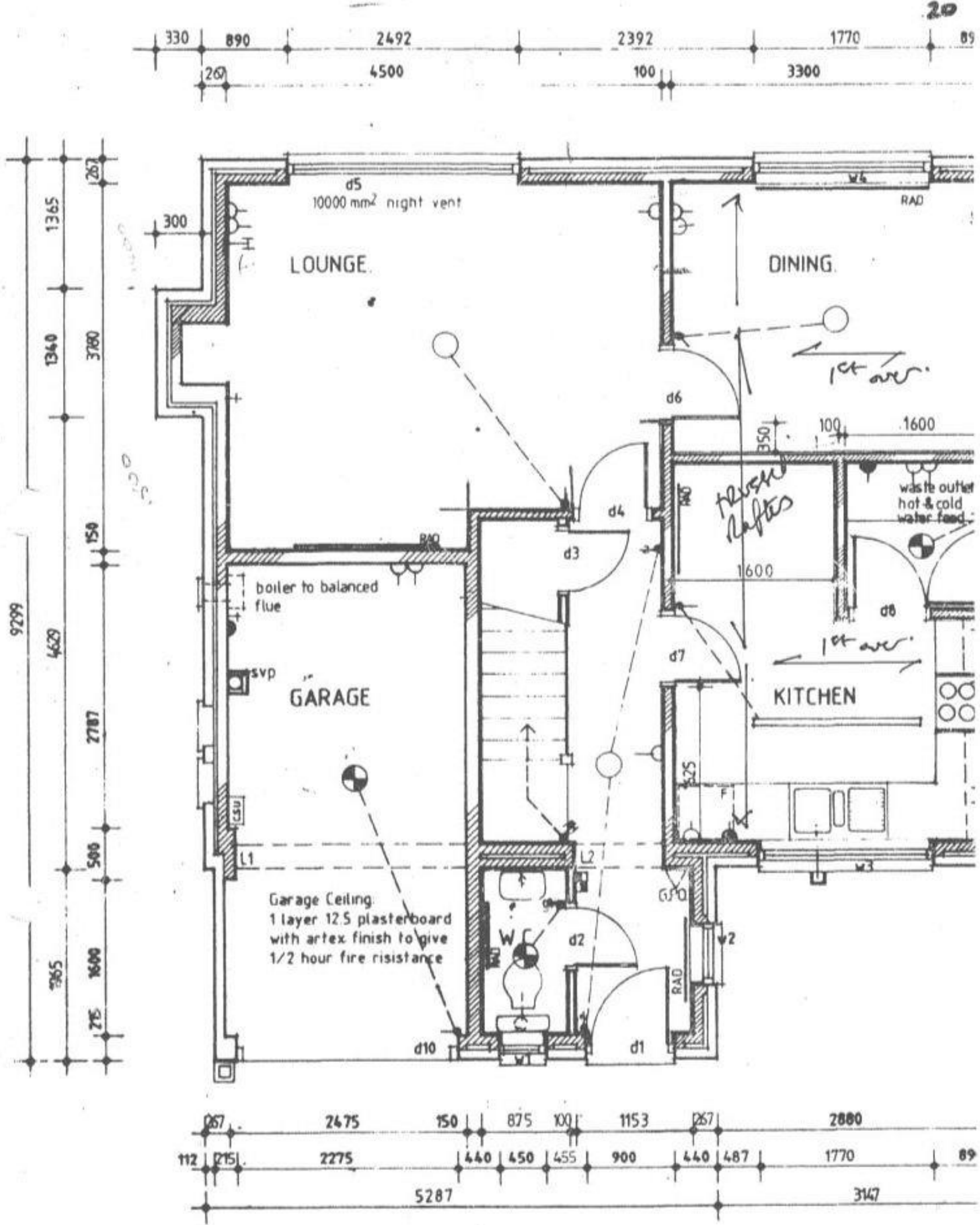
(H462T) Four bedroom detached house with garage

= ORIGINAL
HOUSE
1987.

In keeping with our policy of providing individuality, external treatments often vary from one plot to another. We therefore recommend that purchasers ask our Sales Advisors for details of the treatment specified for individual plots.



DAVID WILSON HOME CENTRES
LEICESTER · OAKHAM · NOTTINGHAM · BOURNEMOUTH
NORTHAMPTON · SOUTH MIDLANDS



Original
Ground Floor Plan 1987.

100 x 50 treated
straps at 2.0m ma
100 x 25 treated s
each dwelling roof
30 x 50 galvanise
ceiling level and t
borgeboard & fascia with
ventilation of 0.3%
ween trusses with
Allow for trap door

LINTOLS
Galvanised steel
150mm bearings to
WINDOWS AND DOORS
Standard joinery

STAIRS
Timber staircase
going to be 220mm
be minimum of 2.0
parallel to pitch in
so as not to permit

PLUMBING
To B.S. 5572:1978
upvc pipes 75mm
patented cage min
ched room line SVF
in 100mm glass fit
timber framing with
tanks and pipework
squareline pvc

Drawings

DRAINAGE
Work to be in acc
Stormwater either 1
3 upvc or S.G. pipe
inspection chamber
have lintot over

CHIMNEY TO LOUNGE
Class 1 appliance - brick
socketed clay flues to B
to extend a min of 600m
precast concrete on d.p.
Coping to oversail chimney
point where chimney meets
Fireplace to have hearth

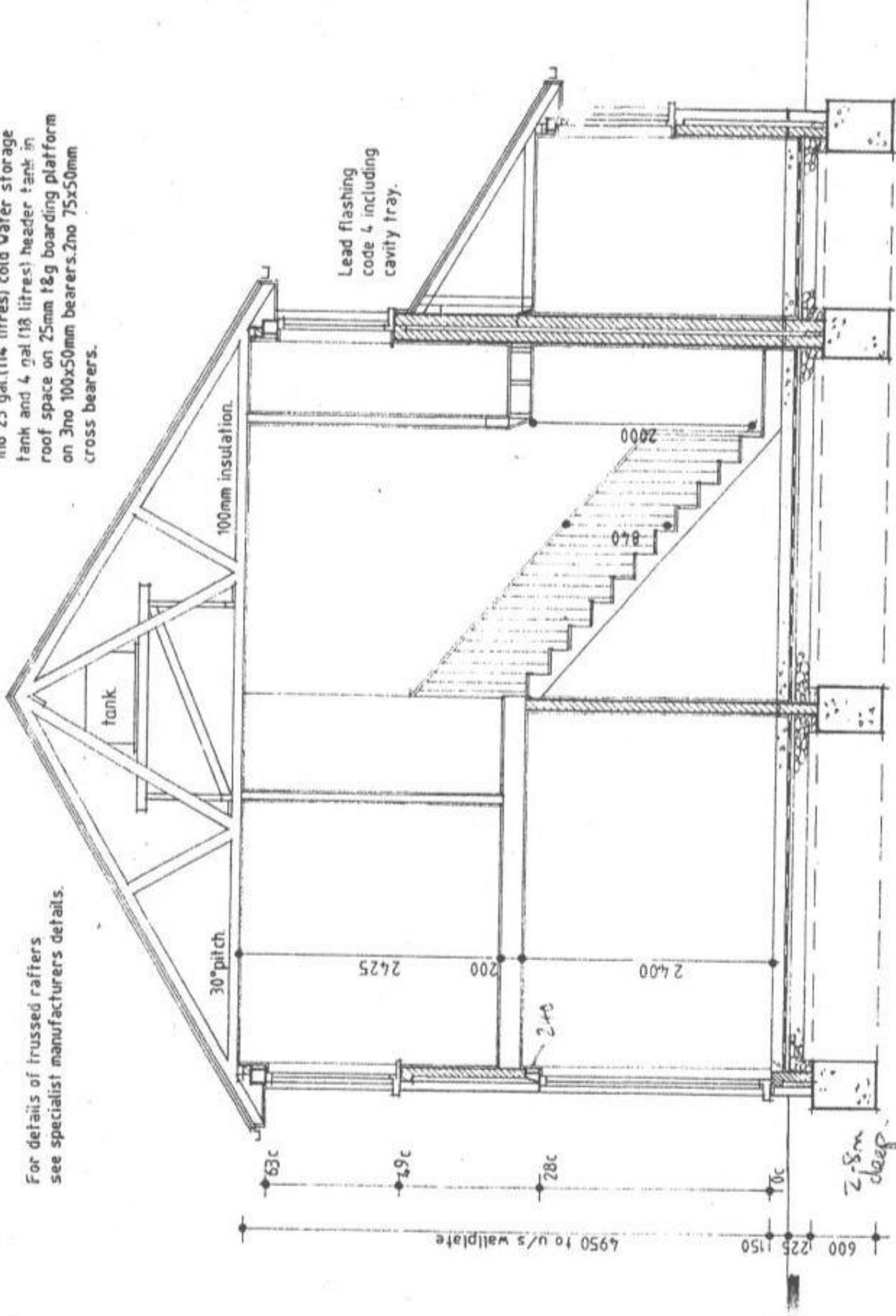
Rev B Cill detail mc
Rev. A General an

1:1

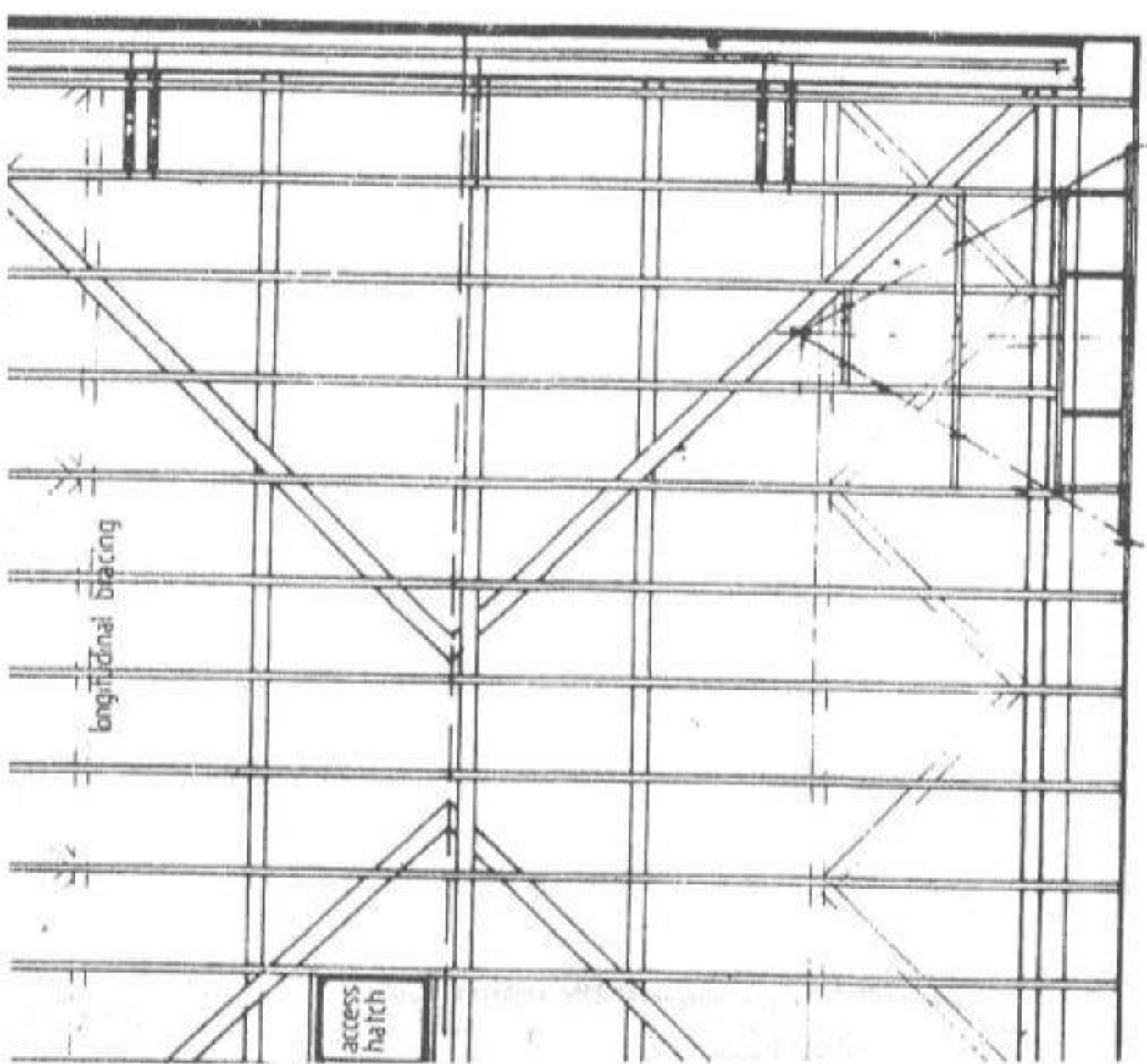
WORKING SECTION

1no 25 gal (114 litres) cold water storage
tank and 4 gal (18 litres) header tank in
roof space on 25mm t&g boarding platform
on 3no 100x50mm bearers. 2no 75x50mm
cross bearers.

For details of trussed rafters
see specialist manufacturers details.



Foundations shown are indicative and should be
checked for suitability of site by subsidiaries engineer.



FOUNDATIONS

Building area shall be stripped of all vegetable soil and rubbish To be suitable for ground conditions and to the satisfaction of the Local Authority Generally trench fill, 600 x 450mm wide under centre lines of walls at a minimum depth of 825mm below finished ground level or 600 x 250mm concrete strip footings

GROUND FLOOR

100mm concrete slab on 1000g polythene d.p.m. on sand blinding on 150mm consolidated hardcore Maximum depth of hardcore to be 600mm

FIRST FLOOR

22mm T and G flooring grade chipboard type 11 or 11/11 on s.w. joists as noted on plans, short edge of board to be supported on joist or noggin 32 x 50mm herringbone or 38 x 150mm solid strutting at centre of spans over 2.5m or at third spans over 4.5m. Ceiling finish to be 'Artex' on 9.5mm plaster board 30 x 5mm galvanised m.s. straps at max. 2.0m centres notched into 3 no. floor joists with downstand built into cavity

WALLS

External Walls: To be 267mm cavity construction 102mm facing brickwork to B.S.3921, 50mm cavity, 115mm 'Celcon' solar blocks laid to manufacturers latest instructions with plasterboard on dabs. Render panel 13mm render on 100mm blocks U value 0.58 W/m²°C

Cavities to be closed at eaves and verges

Both skins to be tied at 450 crs vertically and 900 crs horizontally, staggered with ties to B.S.1243, additional ties at reveals and openings U value not to exceed 0.6 W/m²°C

Vertical Tile Hanging: plain concrete tiles on 38 x 25 treated s.w. battens on untearable felt on 75 lightweight concrete blocks, 50mm cavity, with inner skin and finish as before

Internal Loadbearing Walls: 100mm concrete blocks on foundations below with 9.5 plasterboard finish on Thistlebond dabs, joints to be filled and taped

Internal Non-loadbearing Partitions: 75mm softwood studs 50mm wide at 400mm centres finished both sides with 9.5 mm plasterboard, filled and taped

Walls between bathrooms or w.c.'s and living rooms or bedrooms to be 35dB reducing partitions with 100mm fibreglass quilt in cavity with 12.7 plasterboard filled and taped

Separating Party Wall: 275mm cavity construction of 2 no. skins of 100mm concrete blockwork (1145 kg/m³ minimum) with 75mm cavity lined each side 12.7mm plasterboard on dabs

SCHEDULES

WINDOWS		
NO	LOCATION	SIZE
w1	W.C.	488 x 750
w2	Hall	600 x 1050
w3	Kitchen	1770 x 1050
w4	Dining	1770 x 1200
w5	Shower	1200 x 1050
w6	Bedroom 1	600 x 1050
w7	Bedroom 1	1770 x 1050
w8	Bedroom 2	1770 x 1050
w9	Bedroom 4	1770 x 1050

Mortar to be in accordance with B.S.5262, 1976 and manufacturers instructions, generally to be 1:1.5 cement, lime sand

DAMP PROOFING

1000g polythene d.p.m. with joints lapped and taped, dressed and sealed around pipes and dressed under d.p.c.'s

Damp proof course to B.S.743 at minimum height of 150 above ground level (or floor level) to all load bearing walls and at eaves of openings. Window and door openings to be closed and vertical d.p.c. to be 225mm wide

Cavity trays to be provided over all openings and at junctions and abutments with lead flashings minimum 150 above roofs and chimneys

Flashings to be Code 4 lead

d1	Kitchen	762
d8	Kitchen/Utility	762
d9	Rear Entrance	806
d10	Garage (up & over)	2136
d11	Bathroom	686
d12	A/C	610
d13	Bedroom 3 (fanlight over)	762
d14	Bedroom 4 (fanlight over)	762
d15	Bedroom 2 (fanlight over)	762
d16	Bedroom 1 (fanlight over)	762
d17	Shower	686

LINTOLS

NO	Lintol length	Lintol ref
w1	800	CN45E
w2	900	CN45E
w3	2100	CN7F
w4	2100	CN7F
w5	1500	CN55E
w6	900	CN45E
w7	2100	CN55E
w8	2100	CN55E
w9	1500	CN55E
w10	1500	CN55E
w11	900	CN7E
d1	1200	CN45E
d4	1100	CN102
d5	2800	CN8B
d6	1100	CN102
d7	1100	CN102
d9	1200	CN7E
L1	2700	CN20B
L2	1200	CN18A

ELECTRICAL KEY

	light switch
	2 way light switch
	Pull cord switch
	TV aerial socket
	G.P.O. telephone point
	Immersion switch
	Gas point
	Switched socket outlet 2 gang
	Lamp fixing pendant
	Consumer unit

light switch 1350mm above floor
socket outlet 225 above floor
socket outlet at w/top ht 1050mm

Allow for trap door s.w. lining

LINTOLS

Galvanised steel combined lintols (Catnic or similar) with a min 150mm bearings to B.S.449.

WINDOWS AND DOORS

Standard joinery to B.S.1186: Part 1. Glazing to B.S.6262: 1992.

STAIRS

Timber staircase comprising 13 no. equal risers of 196.15mm minimum going to be 220mm and pitch of flight not to exceed 42°. Headroom to be minimum of 2.0m measured from pitch line. Handrails to be 840mm parallel to pitch line and 900mm at landings. Balustrading to be spaced so as not to permit the passage of a 100mm sphere.

PLUMBING

To B.S.5572:1978. Bath and sink waste 38mm & lav. basin 32mm and upvc pipes 75mm deep seal traps SVP 100mm & upvc terminated with patented cage min. 1000mm above nearest window or 225mm above pit in 100mm glass fibre quilt and 25mm of board material to be surrounded in 100mm glass fibre quilt and 25mm of board material or plaster on timber framing with access panel. Vent pipes as required. C.W. storage tanks and pipework in roofspace to be fully insulated. Stormwater to be squareline pvc.

Downpipes to be located with reference to Engineering drawings

DRAINAGE

Work to be in accordance with CP 301 and engineering drawings. Stormwater either to soakaways min. 3050mm from building or 100mm & upvc or S.G. pipes to sewer. Foulwater in S.G. or upvc pipes through inspection chambers to sewer. Drains passing through buildings to have lintol over.

CHIMNEY TO LOUNGE

Class 1 appliance - brick built chimney with flue linings to B.S.1181:1971. Rebated or socketed clay flues to B.S.65:1981. Marley Trueflue or similar flue size to CP.131. Chimney to extend a min of 600mm high above ridge or 1m min above roof plane. Lapping to be precast concrete on d.p.c. or insitu concrete on d.p.c. on class B Engineering brickwork. Coping to oversail chimney to form drip. D.p.c. to stack 150-300mm min. above highest point where chimney meets roof. Use d.p.c. tray in severe exposed conditions. Fireplace to have hearth min. 300mm wider than fireplace and 500 mm deep.

E - Additional roof bracing as to latest NHBC spec.

Rev D Elec. spec. altered & kitchen units re-arranged

Rev C Elec amendments, cill detail & accom of full architrave

JULY '86

3-2-86

29.10.85

Rev B - Deletion of external lights, bathroom track lighting to kitchen and immersion control switch moved to aerial cupboard 10-85

Rev A - General amendments

Job

MEADOW PARK
ROCKS HEALTH

Title

WORKING DRAWING (SHEET 1 of 2)

David Wilson Homes
(Southern) Ltd
Wimborne House



NO	Room	W	L	H
500	Bathroom	500	1050	2500

DOORS

NO	Room	W	L	H
d1	Front Entrance	806		
d2	W.C.	686		
d3	Store	686		
d4	Lounge	762		
d5	Lounge	7400	Patio	
d6	Lounge/Dining	762		
d7	Kitchen	762		
d8	Kitchen/Utility	762		
d9	Rear Entrance	806		
d10	Garage (up & over)	2136		
d11	Bathroom	686		
d12	A/C	610		
d13	Bedroom 3 (fanlight over)	762		
d14	Bedroom 4 (fanlight over)	762		
d15	Bedroom 2 (fanlight over)	762		
d16	Bedroom 1 (fanlight over)	762		
d17	Shower	686		

LINTOLS

NO	Lintol length	Lintol ref
w1	800	CN45E
w2	900	CN45E
w3	2100	CN7F
w4	2100	CN7F
w5	1500	CN55E
w6	900	CN45E
w7	2100	CN55E
w8	2100	CN55E
w9	1500	CN55E
w10	1500	CN55E
w11	900	CN7E
d1	1200	CN45E
d4	1100	CN102
d5	2800	CN88
d6	1100	CN102
d7	1100	CN102
d9	1200	CN7E
L1	2700	CN20B
L2	1200	CN18A

2.3
165
2.1
29.5

treated s.w. battens on one layer untearable roofing felt laid to allow water to drain into gutter on licensed manufacturers prefabricated roof trusses to C.P.112 Pt.3 1973 and C.P.3 Ch.5 at 600mm centres. Tile fixing over roof and at eaves and verge is to be strictly in accordance with manufacturers instructions to suit prevailing conditions. 100 x 50 treated s.w. wall plates with galvanised m.s. holding down straps at 2.0m maximum centres. 100 x 25 treated s.w. diagonal and longitudinal bracing at gables and in each dwelling roof space. 30 x 50 galvanised m.s. straps screwed to 2 no. trusses at rafter and ceiling level and built into cavity at maximum 1.8 centres. 25mm s.w. barge board & fascia with pre-ventilated soffit to provide cross ventilation of 0.3% of roof area. 100mm glass fibre insulation laid between trusses with 12.7mm plasterboard with 'Artex' finish. Allow for trap door s.w. lining.

LINTOLS

Galvanised steel combined lintols (Catnic or similar) with a min 150mm bearings to B.S.449.

WINDOWS AND DOORS

Standard joinery to B.S.1185: Part 1: Glazing to B.S.6262: 1982

STAIRS

Timber staircase comprising 13 no. equal risers of 195 15mm minimum going to be 220mm and pitch of flight not to exceed 42°. Headroom to be minimum of 2.0m measured from pitch line. Handrails to be 840mm parallel to pitch line and 900mm at landings. Balustrading to be spaced so as not to permit the passage of a 100mm sphere.

PLUMBING

To B.S.5572: 1978. Bath and sink waste 38mm & lav basin 32mm and upvc pipes 75mm deep seal traps SVP 100mm & upvc terminated with patented cage min. 1000mm above nearest window or 225mm above pitched room line SVP passing through habitable rooms to be surrounded in 100mm glass fibre quilt and 25mm of board material or plasters on timber framing with access panel. Vent pipes as required C.W. storage tanks and pipework in roofspace to be fully insulated. Stormwater to be squareline pvc. Downpipes to be located with reference to Engineering drawings.

DRAINAGE

Work to be in accordance with CP 301 and engineering drawings. Stormwater either to soakaways min. 3050mm from building or 100mm & upvc or S.G. pipes to sewer. Foulwater in S.G. or upvc pipes through inspection chambers to sewer. Drains passing through buildings to have lintol over.

CHIMNEY TO LOUNGE

Class 1 appliance - brick built chimney with flue linings to B.S.1185:1971. Rebated or socketed clay flues to B.S.65:1981. Harlequin Trueflue or similar flue size to C.P.131. Chimney to extend a min of 600mm high above ridge or 1m min above roof plane. Lapping to be precast concrete on d.p.c. or insitu concrete on d.p.c. on class B Engineering brickwork. Coping to oversail chimney to form drip. D.p.c. to stack 150-300mm min. above highest point where chimney meets roof. Use d.p.c. tray in severe exposed conditions. Fireplace to have hearth min. 300mm wider than fireplace and 500 mm deep.

E - Additional roof bracing as to latest NHBC spec.

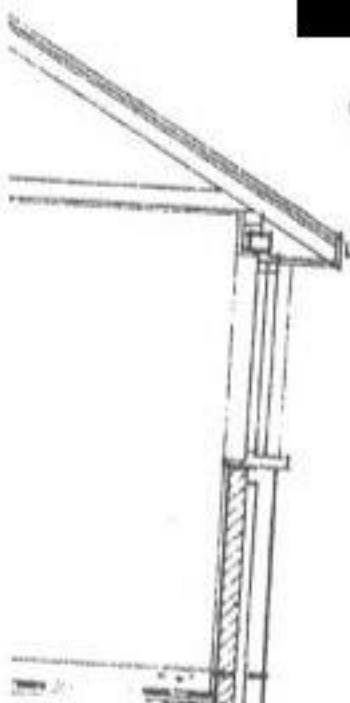
Rev D Elec spec altered & kitchen units re-arranged

Rev C Elec amendments, call detail & accom of full architect

Rev B - Deletion of external lights, balcony track lighting to be deleted and immersion control switch moved to airing cupboard
Rev A - Non-compliance amendments
JULY '86
3-2-86
29.11.85
27/1/85

cold water storage
es) header tank in
& g boarding platfor
ers. 2 no 75x50mm

lead flashing
ode including
a -y.



... A battens on one layer untearable roofing felt laid to allow
water to drain into gutter on licensed manufacturers prefabricated roof
trusses to C.P. 112 Pt. 3 1973 and C.P. 3 Ch 5 at 600mm centres. Tile fix-
ing over roof and at eaves and verge is to be strictly in accordance with
manufacturers instructions to suit prevailing conditions
100 x 50 treated s.w. wall plates with galvanised m.s. holding down
straps at 2.0m maximum centres
100 x 25 treated s.w. diagonal and longitudinal bracing at gables and in
each dwelling roof space
30 x 50 galvanised m.s. straps screwed to 2 no. trusses at rafter and
ceiling level and built into cavity at maximum 1.8 centres 25mm s.w.
batten board & fasc with ventilated soffit to provide cross
ventilation of 0.3% of roof area 100mm glass fibre insulation laid bet-
ween trusses with 12.7mm plasterboard with Artex finish
Allow for trap door s.w. lining

LINTOLS
Galvanised steel combined lints (Cathic or similar) with a min.
150mm bearings to B.S. 449

WINDOWS AND DOORS
Standard joinery to B.S. 1186 Part 1 Glazing to B.S. 6262, 1982

STAIRS
Timber staircase comprising 13 no. equal risers of 196.15mm minimum
going to be 220mm and pitch of flight not to exceed 42°. Headroom to
be minimum of 2.0m measured from pitch line. Handrails to be 840mm
parallel to pitch line and 900mm at landings. Balustrading to be spaced
as not to permit the passage of a 100mm sphere

PLUMBING
To B.S. 5572 1978 Bath and sink waste 38mm & lav. basin 32mm and
upvc pipes 75mm deep seal traps SVP 100mm & upvc terminated with
patented cage min. 1000mm above nearest window or 225mm above pit-
head room line SVP passing through habitable rooms to be surrounded
in 100mm glass fibre quilt and 25mm of board material or plaster on
timber framing with access panel. Vent pipes as required. C.W. storage
tanks and pipework in roofspace to be fully insulated. Stormwater to be
squareline pvc
Downpipes to be located with reference to Engineering
drawings

DRAINAGE
Work to be in accordance with CP 301 and engineering drawings.
Stormwater either to soakaways min. 3050mm from building or 100mm
3 upvc or S.G. pipes to sewer. Foulwater in S.G. or upvc pipes through
inspection chambers to sewer. Drains passing through buildings to
have lintol over

CHIMNEY TO LOUNGE
Class I appliance - brick built chimney with flue linings to B.S. 1181:1971. Rebated or
socketed clay flues to B.S. 65:1981. Marley Trueflue or similar flue size to C.P. 131. Chimney
to extend a min of 600mm high above ridge or 1m min above roof plane. Capping to be
precast concrete on d.p.c. or insitu concrete on d.p.c. on Class B Engineering brickwork.
Coping to oversail chimney to form drip. D.p.c. to stack 150-300mm min. above highest
point where chimney meets roof. Use d.p.c. tray in severe exposed conditions.
Fireplace to have hearth min. 300mm wider than fireplace and 500mm deep.

Rev B Gill detail mod & barge board added 30/10/85
Rev. A General amendments 27/8/85

Title
WORKING DRAWING (SHEET 2 of 2)
SECTION/ELEVATIONS

David Wilson Homes
(Southern) Ltd
Wimborne House
74 Richmond Hill
Bournemouth BH2 6LS
Tel: Bournemouth 296981



Scales	1-50	Dwg No	462 (362)
Date	JUNE 1985		B

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CLAM Report No

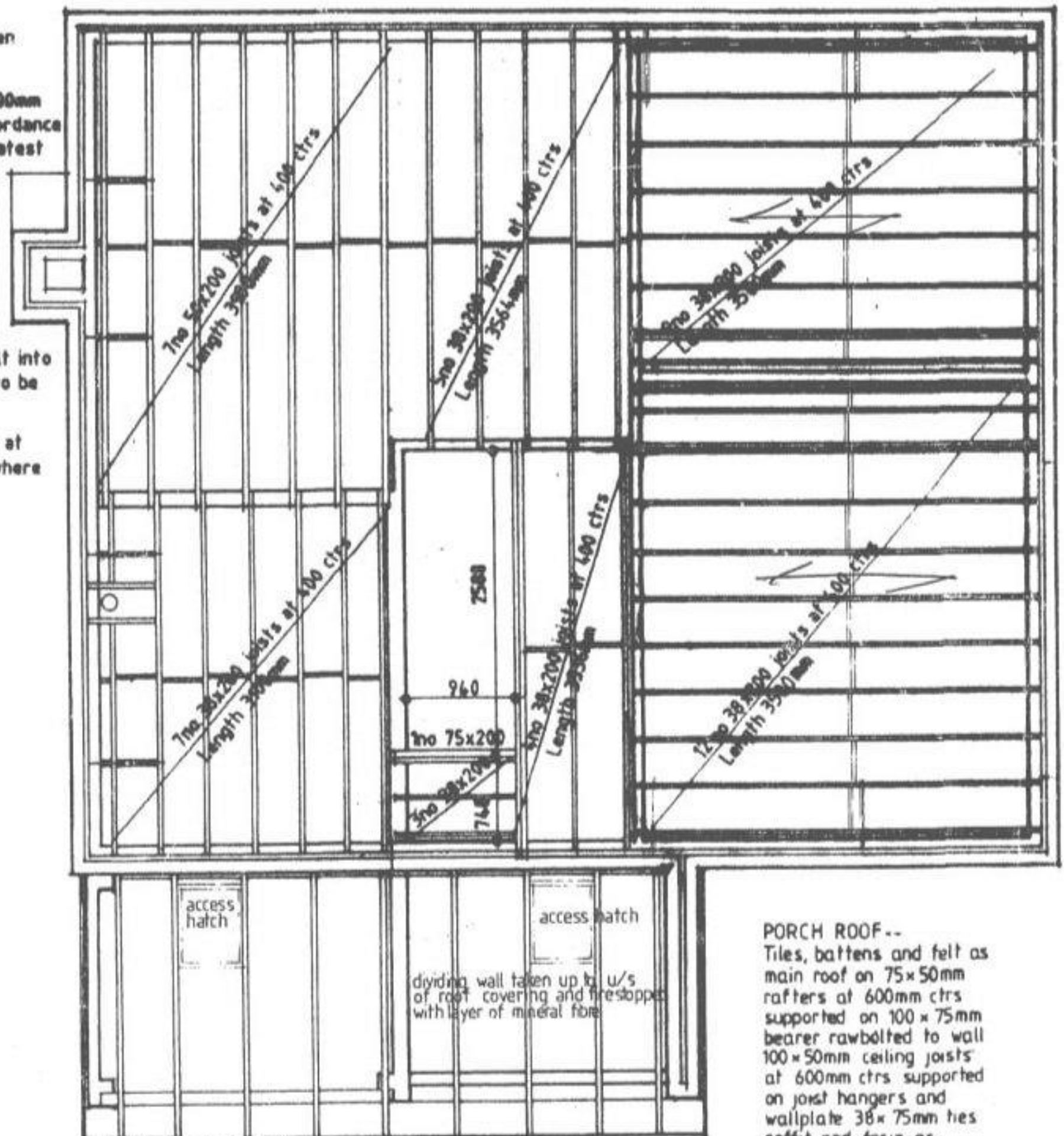
97/02539

3 April

gap between
joists
traps at 2000mm
fixed in accordance
with latest
spec.

traps are built into
joists they are to be
fixed.

joists to be at
least 200mm



PORCH ROOF--

Tiles, battens and felt as main roof on 75x50mm rafters at 600mm ctrs supported on 100x75mm bearer rawbolted to wall 100x50mm ceiling joists at 600mm ctrs supported on joist hangers and wallplate 38x75mm ties soffit and fascia as previously described for main roof with 100mm insulation over W/C and Hall only

Joist Plan.

(= ORIGINAL BUILD) 1987.

20/10/97

Job Information from BOURNCRETE

Inquiry No: 973610

Dwg. No: 1

Date: 15/12/97

Job Details

Client: W T BURDEN (FAREHAM)

Site: FAREHAM
HAMPSHIRE

Building: ASSUMED DOMESTIC

Title: GROUND FLOOR T-BEAM LAYOUT

Beam Series: T155

Block Series: B1950

Loadings (where applicable)Blocks: B1950 = 1950 kg/m³Imposed Load: 1.5 kN/m².FinishesScreed 65 mm 24.0 kN/m³.2nd 1

.Dimensions are in mm.

.Centre line of beams shown only.

.For quantities and beam lengths see schedule below.

.Beam lengths have been rounded to nearest 50mm to conform with BOURNCRETE'S stock sizes.

.All beams at 520 centres unless indicated by a section.

.Infill material to be fine concrete of a 1:3 cement/zone 2 washed sand mix.

.Void vents (if required) to be

supplied to local Authority/NHBC requirements.

8. Dashed beam and/or beams under partitions to be placed first.

DRAWING DIMENSIONS AND BEAM
SCHEDULE CHECKED AND AGREED BY
CLIENT:

SIGNED

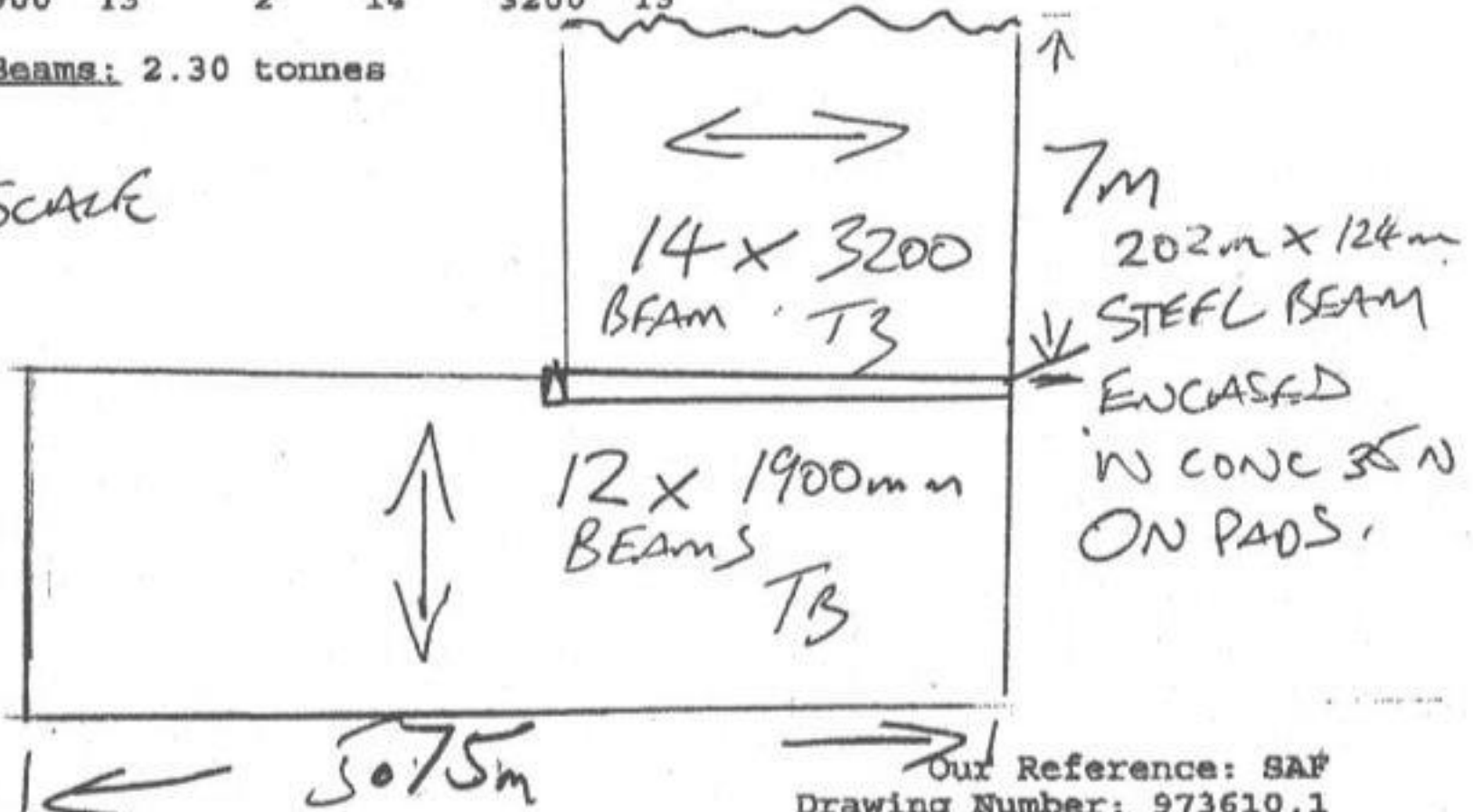
DATED 18/12/97

T155 Beam Schedule By Bay

Bay No	Length	Type	Bay No	Length	Type	Bay No	Length	Type
1	12	1900 T3	2	14	3200 T3			

Total Weight of Beams: 2.30 tonnes

NOT TO SCALE



STRUCT. E.
ENGINEER

21 PEMBROKE ROAD
OLD PORTSMOUTH
PORTSMOUTH PO1 2NS
TELEPHONE (01705) 820801

PROJECT 34 GRASSMERE WAY

COWPLAIN, HANTS.

WATERLOOVILLE P678RT.

TWO-STOREY EXTENSION

NOV
96

①

DRAWING, BY OTHERS, REFERS.

DATA:	EX. ROOF (TRUSSED RAFTERS)	2.0 kN/m ² (INCL. SNOW)
	NEW LOWER ROOF	1.6 kN/m ² (" ")
	FLOORS	2.0 kN/m ² (INCL. 1.5 kN/m ²)
	INTERNAL I/D WALL	2.3 kN/m ²
	CAVITY WALL (BRICK + BLOCK)	4.3 kN/m ² (2.3 + 2)
	STUD WALL	0.4 kN/m ²

STEEL DESIGN TO BS 449

MASONRY WALLS TO BS 5628

TIMBER DESIGN TO BS 5268

REINFORCED CONCRETE TO I-STRUCT. E / I.C.E. MANUAL (BS 8110)

NEW BEAMS AT FIRST FLOOR

BEAM B1 (OVER KITCHEN - SUPPORTING WALL SEPARATING BED. 1 AND NEW BED.)
EFF. SPAN 3.7m.

(NEW ROOF ASSUMED TRUSSED RAFTER GIRDER + JACK RAFTERS)

WALL OVER (EX. OUTER SKIN REMOVED)	2.3 x 2.6 =	6.0 kN/m
FLOOR	2 x 6.2 / 2 =	6.2 "
BEAM		0.4
		<u>12.6 kN/m</u>

$$M = 12.6 \times 3.7^2 / 8 = 21.6 \text{ kN.m} \quad R = 12.6 \times 3.7 / 2 = 23.3 \text{ kN.}$$

IF 203 x 133 x 30 Kg. U.B

$$f_s = 21.6 \times 10^6 / 279 = 78 \text{ N/mm}^2$$

$$e/r = 370 / 3.18 = 116$$

$$D/t = 21.5 \text{ ALLOW } 120 \text{ N/mm}^2$$

∴ 203 x 133 x 30 Kg. U.B. ADEQUATE

BEAM B2 (SUPPORTS B1 AND UPPER FRONT CAVITY WALL)

EFF. SPAN 3.8m.

MAIN ROOF LOAD	2 x 7.5 / 2	= 7.5 kN/m
LOWER ROOF LOAD	1.6 x 2 / 2	= 1.6 "
WALL OVER	4.3 x 2.6	= 11.2 "
BEAM		0.9 "
		<u>21.2</u>

INNER CM.	OUTER CM.
7.5	
	1.6
6.0	5.2
0.45	0.45
<u>13.95</u>	<u>7.25</u>

LOAD FROM B1 = 23.3 kN

$$M = 33.9^2 / 2 \times 13.95 = 41.2 \text{ kN.m}$$

IF 254 x 146 x 37 Kg. U.B

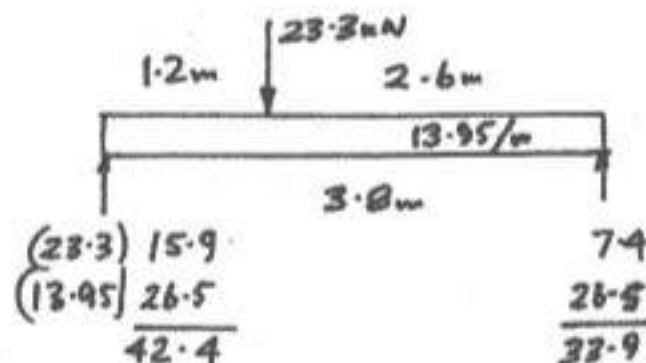
$$f_s = 41.2 \times 10^6 / 434 = 95 \text{ N/mm}^2$$

$$e/r = 33.8 \times 10^2 / 3.47 = 131$$

$$D/t = 23.4 \text{ ALLOW } 107 \text{ N/mm}^2$$

∴ 254 x 146 x 37 Kg. U.B. ADEQUATE

PROVIDE 2/254 x 146 x 37 Kg. U.B BOLTED TOGETHER - 20mm BOLTS @ 600 c/c



CONTINUED

TIVELY CONTINUATION OF B2) EFF. SPAN 1.9 m.

$$R = 21.2 \times 1.9 / 2 = 20.1 \text{ kN}$$

SECTION (cf. B2) 2/254x146x37 Kg. U.B.s BOLTED TOGETHER ADEQUATE

STANCHION SUPPORTING B2 AND B3

$$\text{TOTAL LOAD} = 21.2 \times 5.7 / 2 + 15.9 = 76.3 \text{ kN}$$

IF 254x102x28 Kg. U.B. STANCHION;

EFF. HEIGHT 2.6 m.

ALLOWABLE DIRECT LOAD = 225 kN.

$$\text{B.M. ON STANCHION} = [(40.3 + 15.9) - 20.1] \times 0.051$$

$$= 1.84 \text{ kN.m}$$

$$\therefore f_c = 1.84 \times 10^6 / 349 = 53 \text{ N/mm}^2$$

$$e/r = 260 / 2.22 = 117$$

$$d/k = 26 \text{ ALLOW } 112 \text{ N/mm}^2$$

$$\therefore \frac{76.3}{225} + \frac{53}{112} = 0.34 + 0.47 = 0.81 < 1$$

$$\therefore 254 \times 102 \times 28 \text{ Kg. U.B. STANCHION ADEQUATE}$$

PADSTONE BASE ON MINIMUM 200 BRICKWORK BELOW GO LEVEL

$$R = 76.3 \text{ DESIGN } R = 76.3 \times 1.5 = 115 \text{ kN}$$

ASSUME MINIMUM WIDTH OF BRICKWORK BELOW FLOOR = 200 mm

ASSUME NOT LESS THAN 20 N/mm² BRICK

$$f_{ck} = 5.8 \text{ N/mm}^2 \quad \gamma_m = 3.5$$

$$\therefore \text{L.O.S.} = 1.25 \times 5.8 / 3.5 = 2.07 \text{ N/mm}^2$$

$$\therefore \text{LENGTH OF EFFECTIVE 200 WIDE PADSTONE}$$

$$= 115 \times 10^3 / 200 \times 2.07 = 278 \text{ mm}$$

$$\text{PROVIDE PADSTONE 450 LONG} \times 260 \text{ WIDE} \times 150 \text{ DEEP}$$

LAYOUT PLAN OF STEELWORK

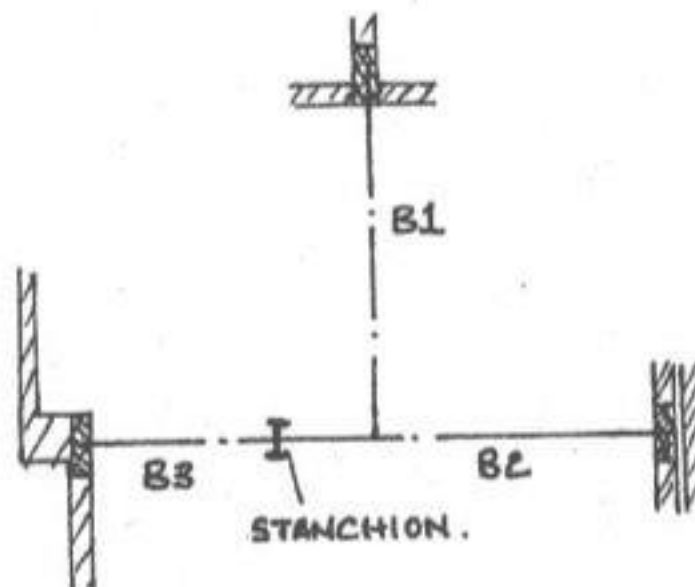
FOR DETAILS SEE SHEET (3).

BEAM B1 203x133x30 Kg. U.B.

BEAM B2 2/254x146x37 Kg. U.B.s
B3 BOLTED TOGETHER
20 mm BOLTS. AT 600 c/c

PADSTONES 450x100x150 DEEP.

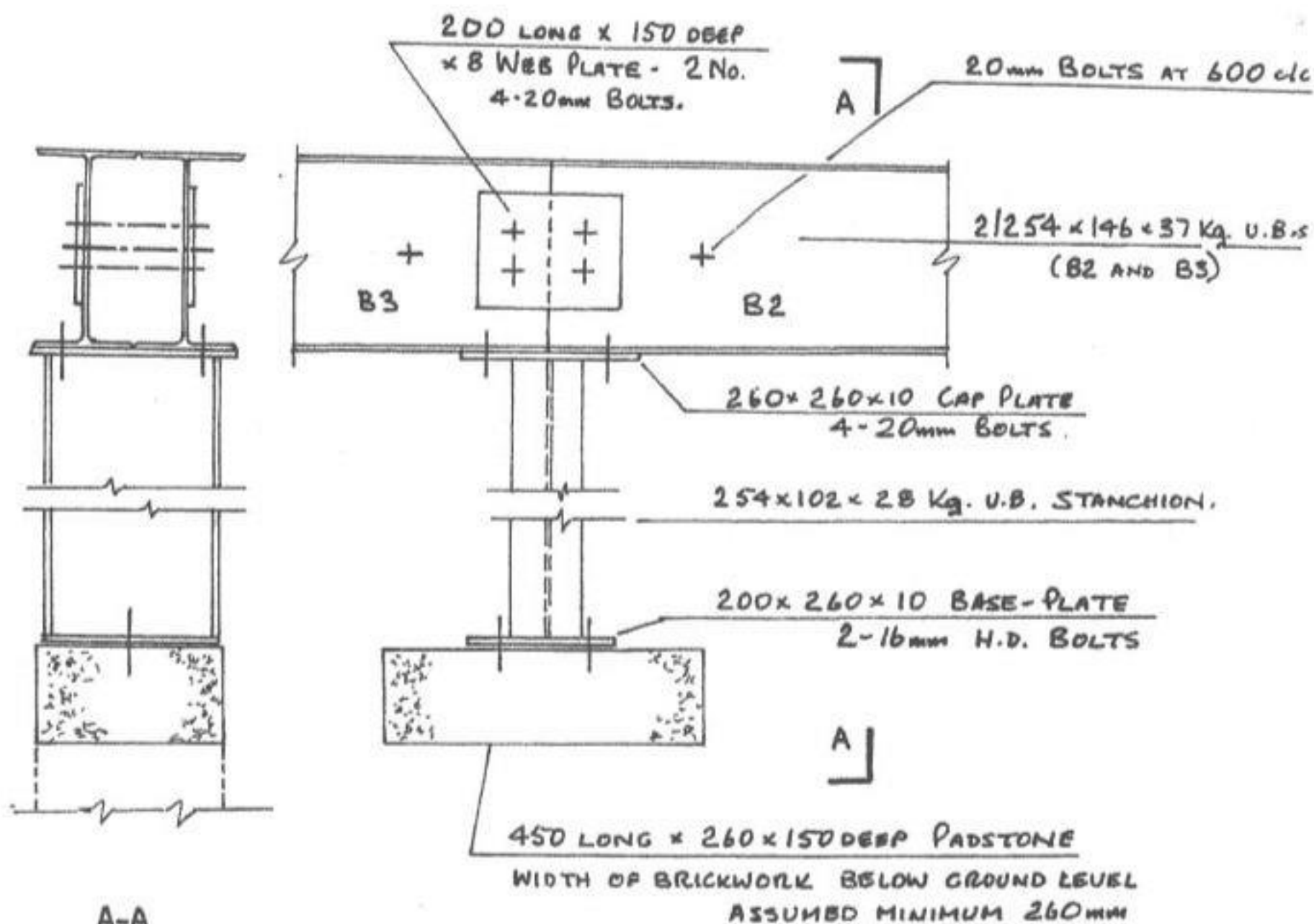
STANCHION 254x102x28 Kg. U.B.



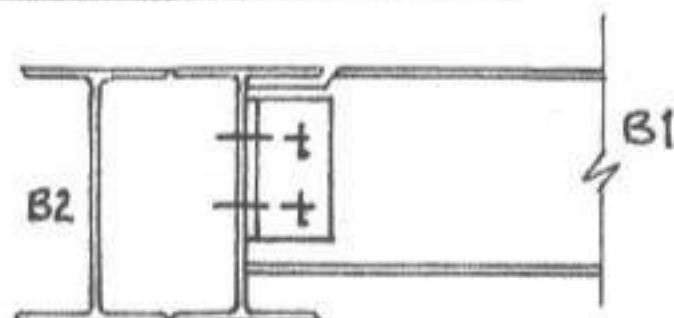
CONTINUED

DETAILS OF STEELWORK.

B2, B3 AND STANCHION.



CONNECTION DETAIL B1 TO B2



CONNECTION B1 TO B2

2-90 x 90 x 8 ANGLE CLEATS x 140 LONG
2-20mm BOLTS ALL LEGS
VERTICAL PITCH OF BOLTS 70mm

CONTINUED

FOUNDATION LOADING.

NEW END WALL

ROOF.	ALLOW	$2 \times 1.5 =$	3.0 kN/m	(10% REDUCTION FOR GLAZING ETC.)
WALL		$4.3 \times 5.5 \times 9 =$	21.3 "	
NEW 1ST FLOOR		$2 \times 2.8/2 =$	2.8 "	
" 6D FLOOR		"	2.8 "	
GD. BEAM (500x500)		$.5^2 \times 24 =$	6.0 "	
			35.9 kN/m	

LOAD FROM BEAM B2: 33.9 kN.

NEW REAR WALL

(mm) ROOF	$2 \times 7.5/2 =$	7.5 kN/m
WALL		21.3 "
FLOORS NOMINAL		1.0 "
BEAM		6.0 "
		35.8 kN/m

NEW FRONT WALL

ROOF (LOWER)	$1.6 \times 2.2/2 =$	1.8 kN/m
WALL	$4.3 \times 3 \times 9 =$	11.6 "
FLOOR	$2 \times 1.8/2 =$	1.8 "
BEAM		6.0 "
		21.2 kN/m

PILES SUPPORTING GROUND BEAMS

LAYOUT OF PILES DESIGNED FOR MAXIMUM WORKING LOAD 100 kN.

IF PILE SITED BELOW BEAM B2:

LOAD FROM B2 = 33.9 kN

LOAD FROM GD. BEAM = $100 - 33.9 = 66.1$ kN

$\therefore$ TOTAL LENGTH OF SPANS ADJACENT PILE = $\frac{66.1}{35.9} \times 2 = 3.7$ m.

$\therefore$ SPAN No. 1 FROM FRONT CORNER	= 1.9 m	} TOTAL 5 PILES
" " 2	= 1.8 m.	
3	= 2.7 m	
4	= 2.7 m	

SINGLE SPAN FOR NEW REAR WALL

2 SPANS FOR NEW FRONT WALL

1 PILE

2 PILES

TOTAL 8 No PILES

N.B.

PILE DESIGN CALCULATIONS TO BE PROVIDED BY PILING CONTRACTOR.

FOR INDIVIDUAL PILE LOADS SEE SHEET ⑤

CONTINUED

FILE LOADS

P1. FROM SPAN $35.8 \times 2.4 / 2 = 43.0 \text{ kN}$
 FROM CANTILEVER (ALLOW .5m)
 $35.8 \times .5 + 35.8 \times .5 \times .25 / 2.4 = 17.9 \text{ kN}$
 $+ 1.9 \text{ kN}$
 62.8 kN

P2 FROM REAR WALL 43.0 kN
 FROM FLANK WALL
 $35.9 \times 2.7 / 2 = 48.5 \text{ kN}$
 91.5 kN

P3 $48.5 \times 2 = 97.0 \text{ kN}$

P4 $35.9 \times (2.7 + 1.8) / 2 = 80.8 \text{ kN}$

P5 $35.9 \times (1.8 + 1.9) / 2 + 33.9 (82)$
 $= 66.4 + 33.9 = 100.3 \text{ kN}$

P6 $35.9 \times 1.9 / 2 + 21.2 \times 2.7 / 2$
 $= 34.1 + 28.6 = 62.7 \text{ kN}$

P7 $21.2 \times 5.4 / 2 = 57.2 \text{ kN}$

P8 $21.2 \times \frac{2.7}{2} + \frac{21.2 \times .5}{2} + 21.2 \times .5 \times .25 / 2.7$
 $= 28.6 + 10.6 + 1 = 40.2 \text{ kN}$

8 No PILES DESIGNED FOR MAXIMUM WORKING LOAD OF 100 kN REQUIRED.

GROUND BEAMS

DESIGN FOR SPANS P2-P3 AND P3-P4.

MAX. LOADING 35.9 kN/m .

$M = 35.9 \times 2.7^2 / 8 = 32.7 \text{ kN.m}$. DESIGN $M = 32.7 \times 1.5 = 49.1 \text{ kN.m}$.

IF $500 \times 500 \text{ BEAM}$. 30 N/mm^2 CONCRETE $d = 440$.

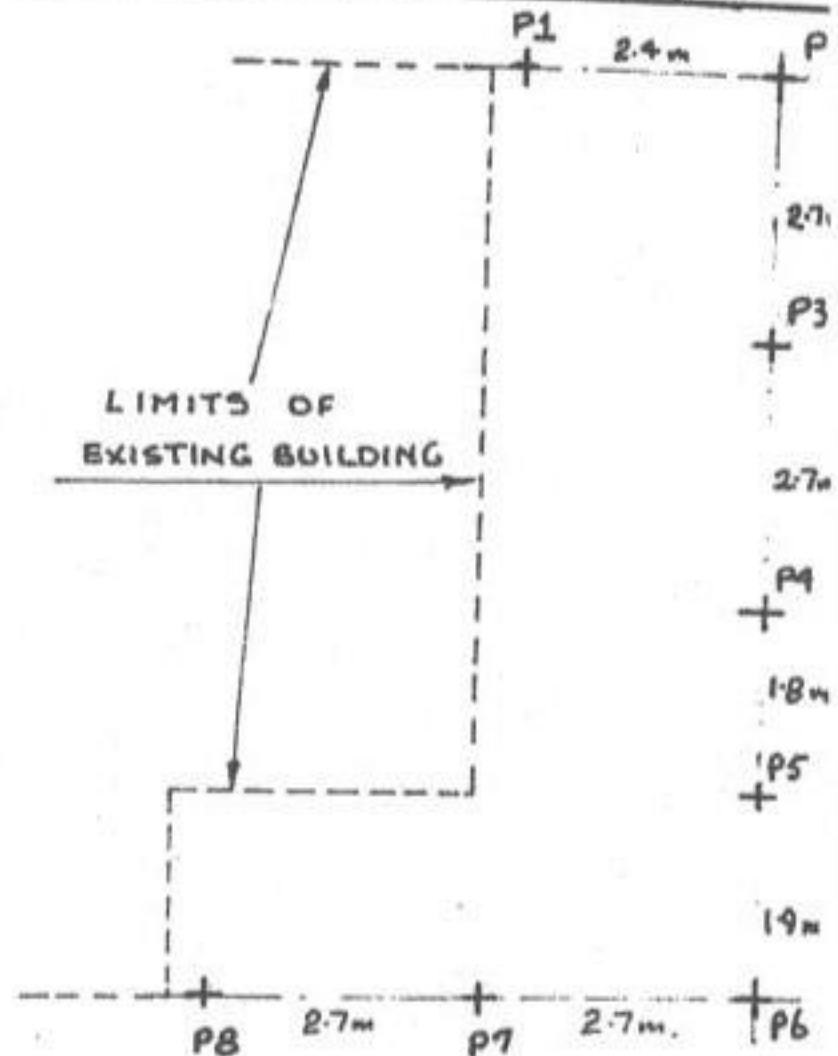
$M_u = 0.158 \times 30 \times 500 \times 440^2 / 10^6 = 453 \text{ kN.m}$.

$A_t = 49.1 \times 10^6 / 0.87 \times 460 \times 440 \times 0.775 = 360 \text{ mm}^2$.

MINIMUM TENSION REINFT. $= 0.002 \times 500 \times 500 = 500 \text{ mm}^2$.

PROVIDE 3-16mm BARS TOP AND BOTTOM. (603 mm²)

CONTINUED



GROUND BEAMS CONTINUED.

MAXIMUM SHEAR (ADJACENT P2 AND P3) = 48.5 kN

$$V = 48.5 \times 1.5 = 72.8 \text{ kN}$$

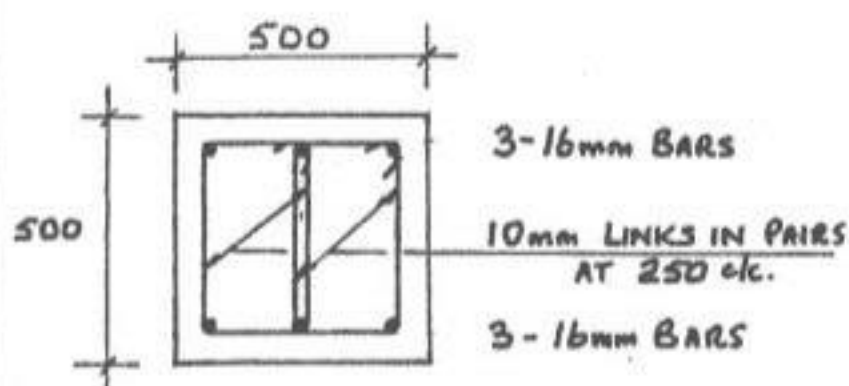
$$v = 72.8 \times 1000 / 500 \times 440 = 0.33$$

$$v_c = 0.43. \left(\frac{100 A_s}{b d} = \frac{100 \times 603}{500 \times 440} = 0.274; v_c = 0.43 \right)$$

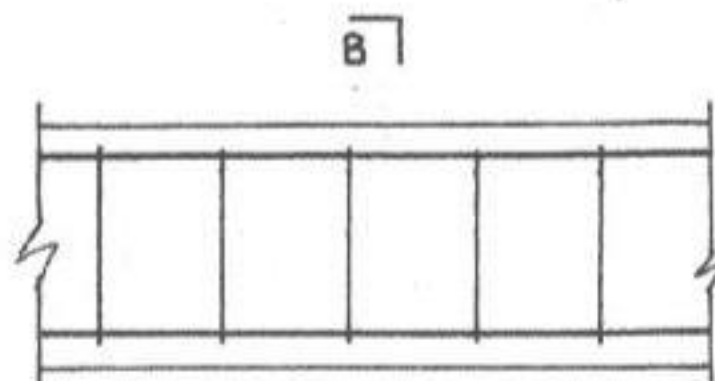
$$\therefore \text{MINIMUM LINKS} = A_{sv} > \frac{0.4 \times 500 \times \overset{\text{(SPACING)}}{250}}{0.87 \times \underset{\text{(MILD STEEL)}}{250}} = 202 \text{ mm}^2$$

PROVIDE 10mm LINKS IN PAIRS AT 250 c/c THROUGHOUT.

DETAIL OF GROUND BEAM



B-B



PART ELEVATION OF GROUND BEAM

CONCRETE MIX.

30 N/mm² / 20 / MEDIUM

CONCRETE COVER

50mm.

REINFORCEMENT

HIGH YIELD STEEL MAIN REINFT.

MILD STEEL LINKS.

CONTINUED

LAYOUT OF PILES AND GROUND BEAMS

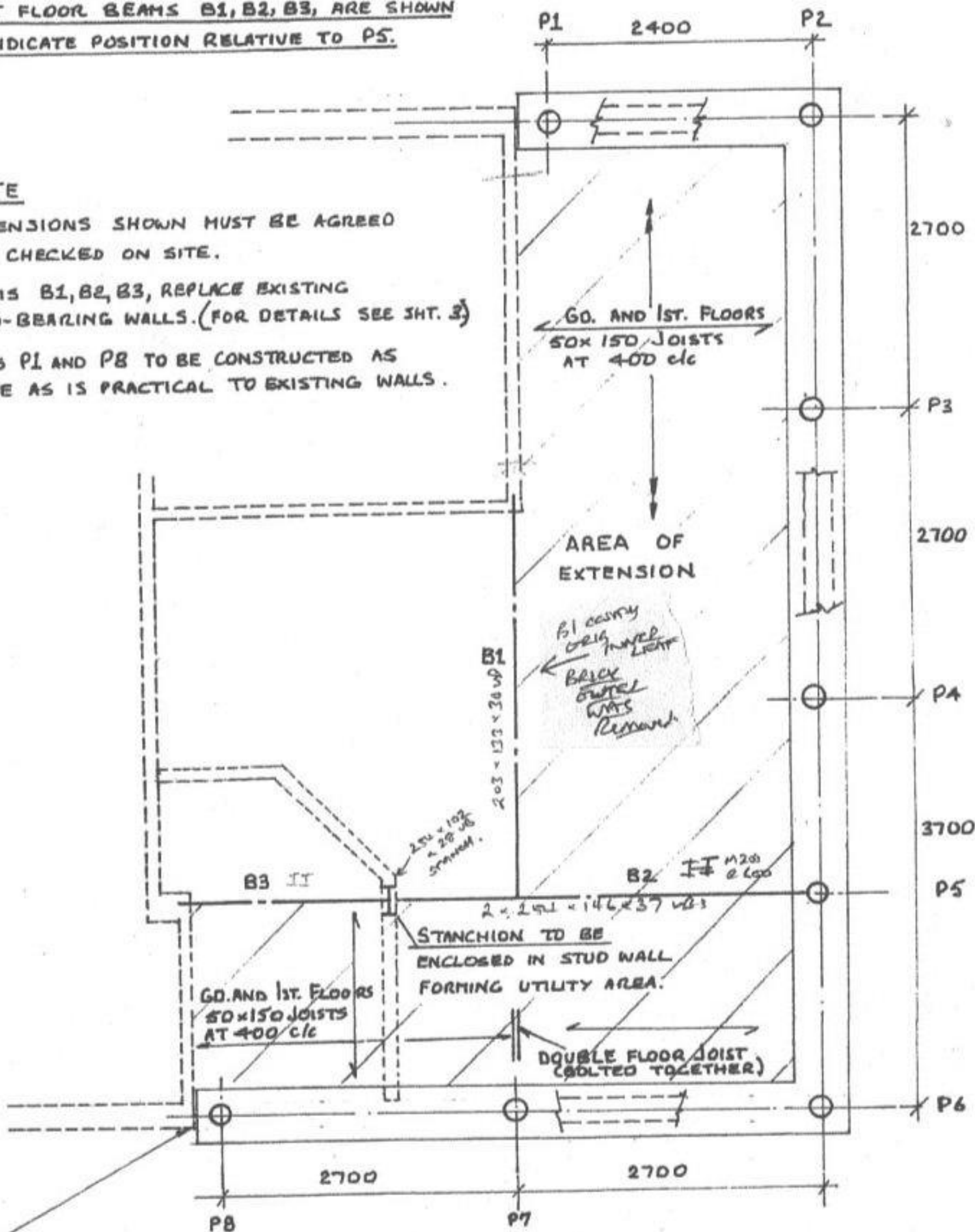
FIRST FLOOR BEAMS B1, B2, B3, ARE SHOWN
TO INDICATE POSITION RELATIVE TO P5.

NOTE

DIMENSIONS SHOWN MUST BE AGREED
AND CHECKED ON SITE.

BEAMS B1, B2, B3, REPLACE EXISTING
LOAD-BEARING WALLS. (FOR DETAILS SEE SHT. 3)

PILES P1 AND P8 TO BE CONSTRUCTED AS
CLOSE AS IS PRACTICAL TO EXISTING WALLS.



BEAM B4 (SUPPORTS BEAM B2 OVER WINDOW IN NEW FLANK WALL)
DESIGN FOR EFFECTIVE SPAN 2.0m

$$\text{TOTAL LOAD FROM B2} = 33.9 + 7.25 \times 3.8/2 = 33.9 + 13.8 = \underline{47.7 \text{ kN}}$$

INNER BLOCKWORK: ALLOW $1.5 \times 2 = 3 \text{ kN/m}$
 ROOF ALLOW $1.6 \times 1 = \underline{1.6 \text{ kN/m}}$
 4.6 kN/m

$$M = \frac{47.7 \times 2}{4} + 4.6 \times \frac{2^2}{8}$$

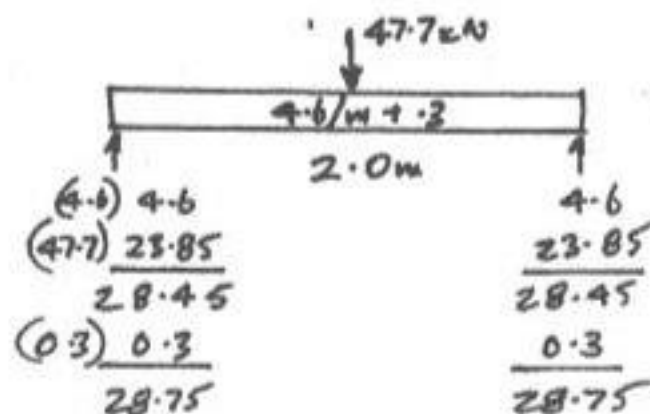
$$= 23.85 + 2.45 = \underline{26.3 \text{ kN.m}}$$

IF $203 \times 102 \times 23 \text{ Kg. U.B.}$
 $f_c = 263 \times 10^3 / 206 = 128 \text{ N/mm}^2$

$$l/r = \frac{2 \times 10^3 \times 1.2}{2.37} = 101$$

$$D/r = 21.8 \text{ ALLOW } 132 \text{ N/mm}^2$$

$\therefore 203 \times 102 \times 23 \text{ Kg. U.B. ADEQUATE}$



BEARINGS ASSUME 2.8 N/mm^2 BLOCK; MORTAR III; $f_c = 2.8$ $\gamma_m = 3.5$

$$\therefore \text{C.O.S.} = 1.25 \times 2.8 / 3.5 = 1.0 \text{ N/mm}^2$$

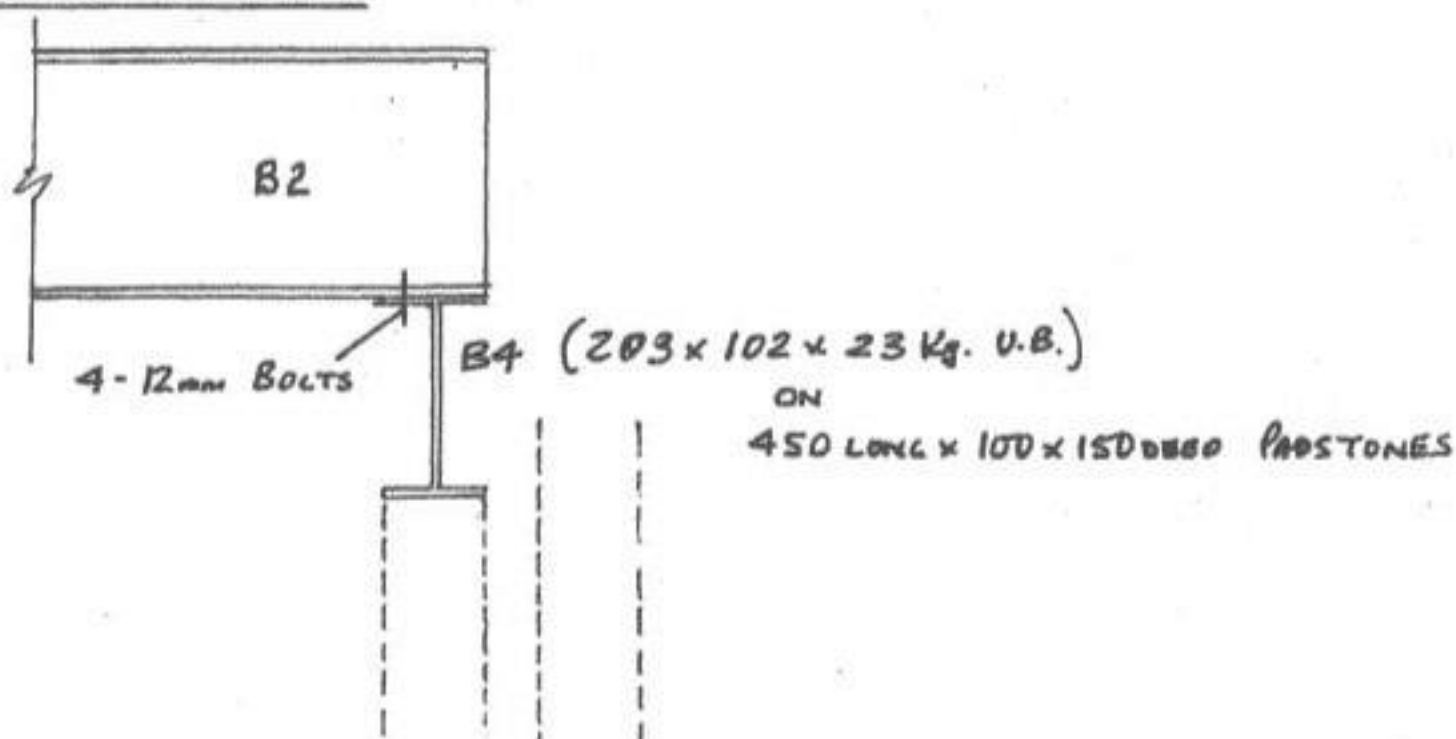
$$\text{DESIGN } R = 28.75 \times 1.5 = 43.1 \text{ kN}$$

$$\therefore \text{LENGTH OF } 100 \text{ WIDE PADSTONES}$$

$$= 43.1 \times 10^3 / 100 \times 1$$

$$= 431 \text{ mm}$$

$\therefore 450 \text{ LONG} \times 100 \times 150 \text{ DEEP PADSTONES ADEQUATE}$

DETAIL - CONNECTION B2 TO B4

SENDER WITH TIMBER
FRAMING TO MATCH
EXISTING.

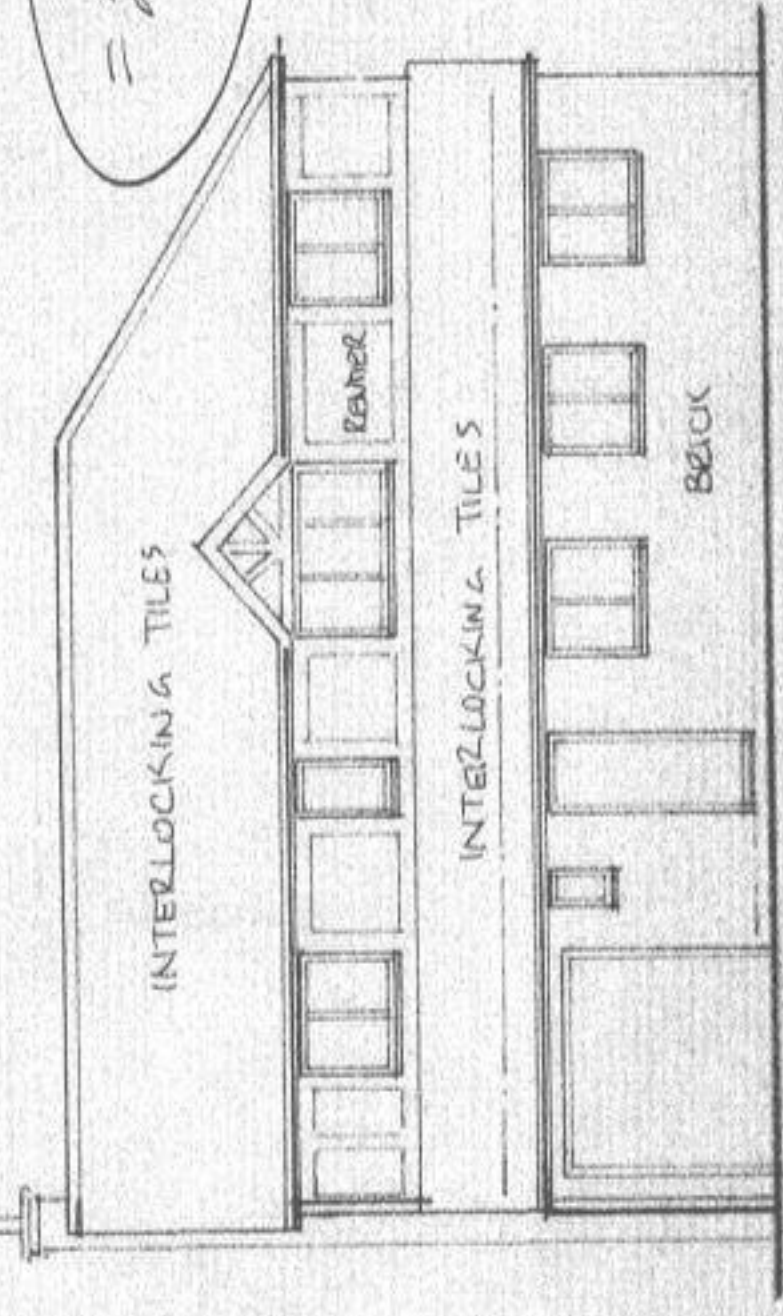
INTERLOCKING TILES
TO MATCH EXISTING.

BRICK TO MATCH
EXISTING.

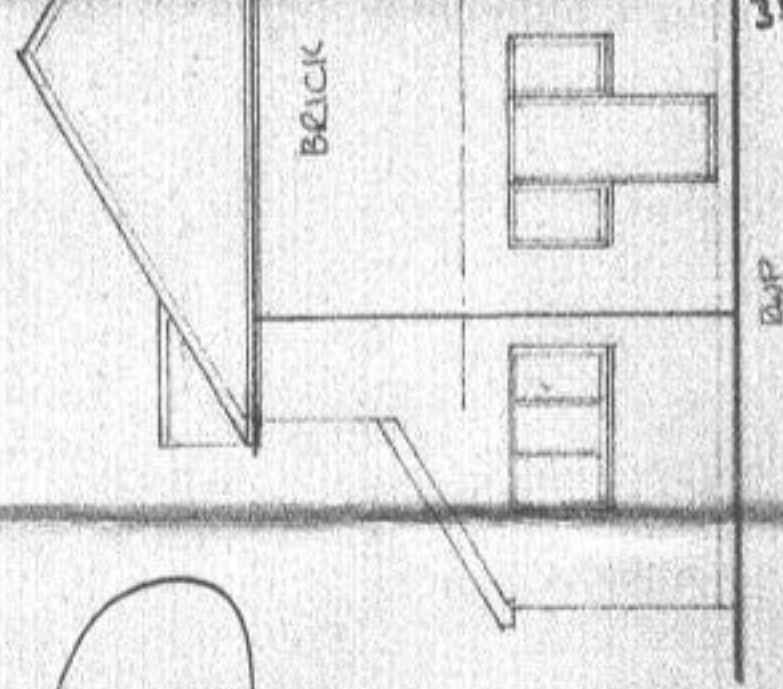
Proposed Elevations

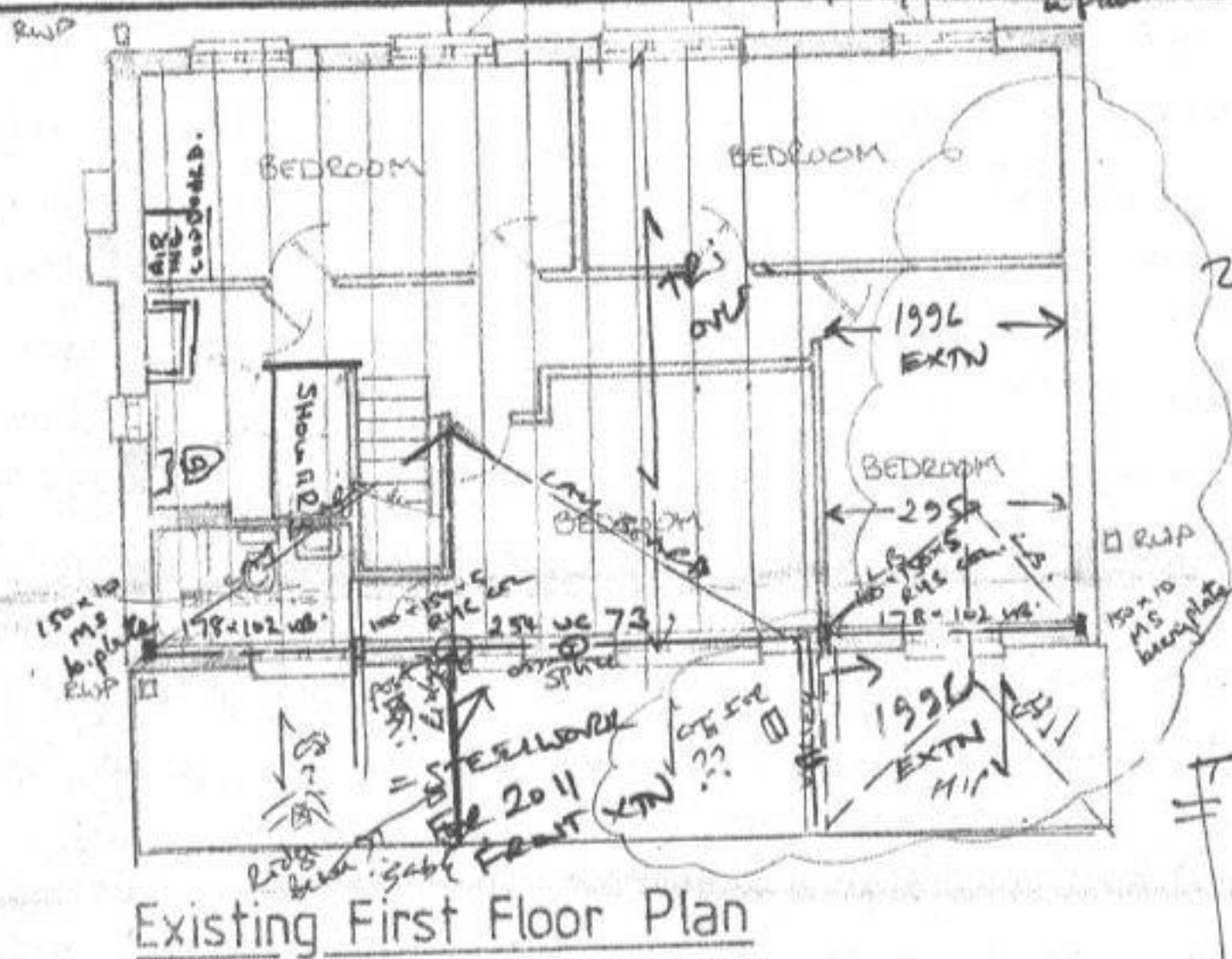
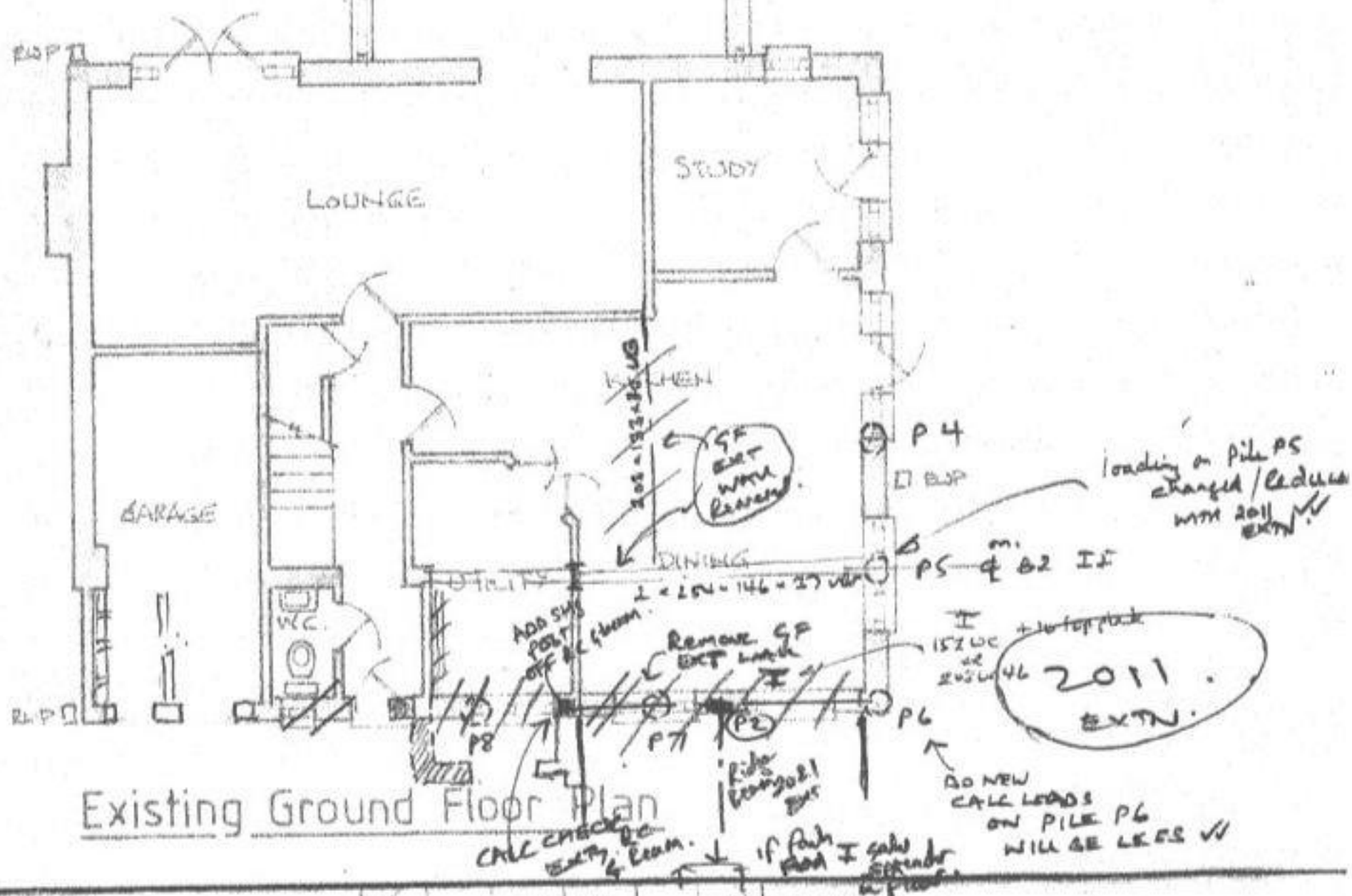
Front - East

Side - North



= 2011
EXTN





FLOOR PLANS
PRIOR TO
2011 EXTN

Bedroom

Bedroom

Bathroom

Bedroom

Bedroom

En-suite

orig. block
inner leaf
remained.
(brick outer
removed)

178.102 x 198.148

254 x 734 x 734

178.102 x 198.148

150x10
MILD ST

150x100x5
POST

150x100x5
POST

150x10mm THICK
MILD STEEL
BEARING
PLATE

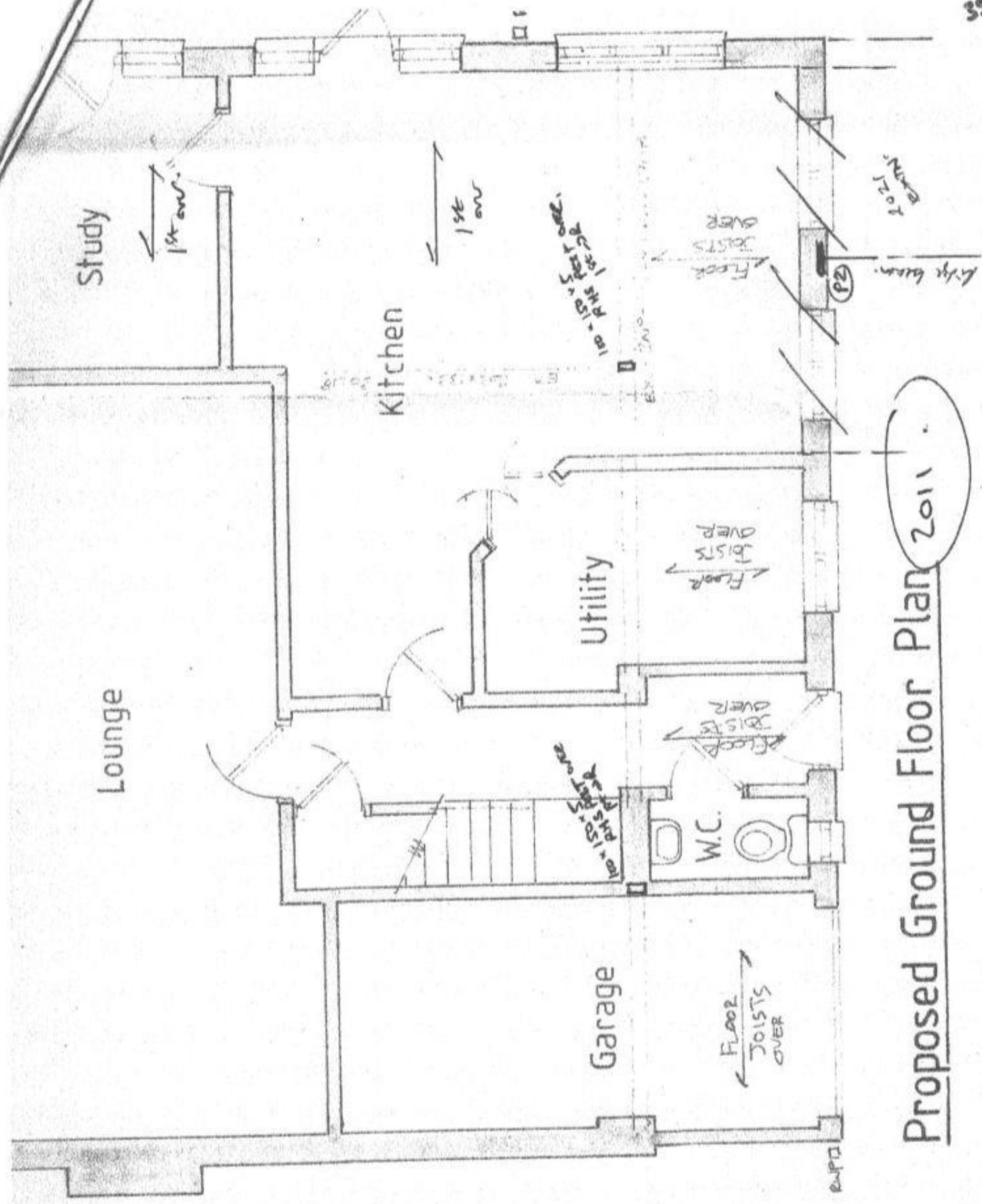
2011
EXTN

1st Floor
for 2011 EXTN

102

WP

20



Proposed Ground Floor Plan 2011

G F 2011