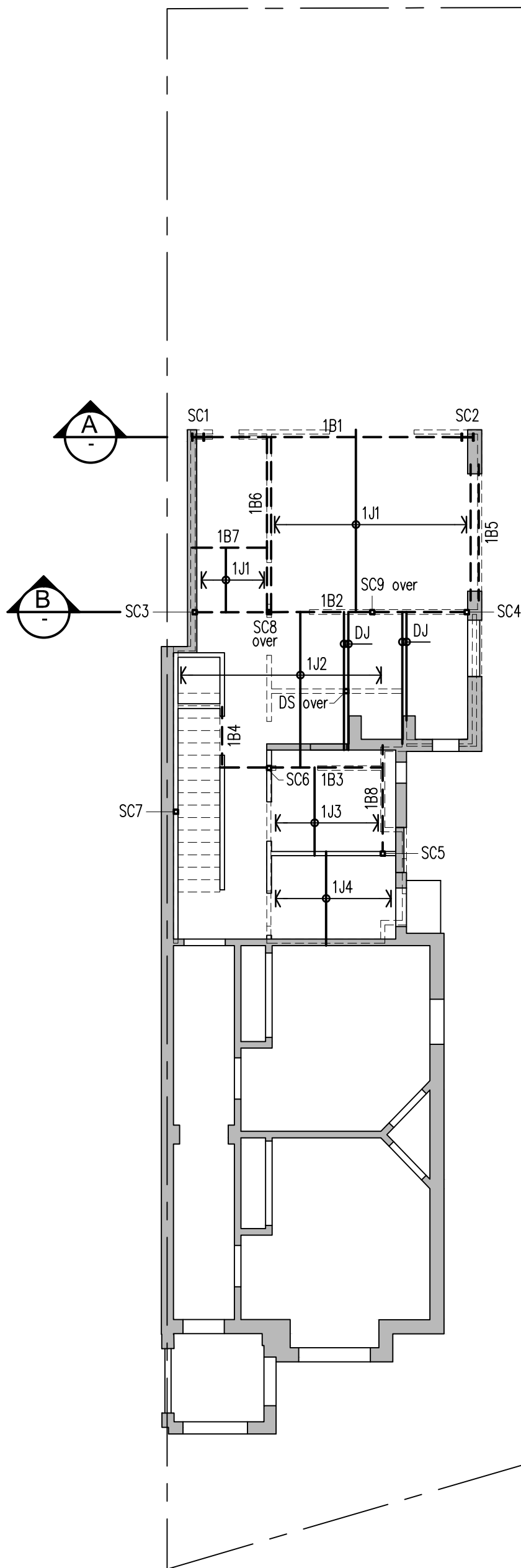


### PLAN ON FOOTINGS

Note :  
 FP1 600 x 600 x 300 deep mass concrete footing pad  
 FP2 600 x 600 x 400 deep reinforced footing pads  
 FP3 400 x 400 x 300 deep mass concrete footing pads (for stud walls)  
 Refer typical sections

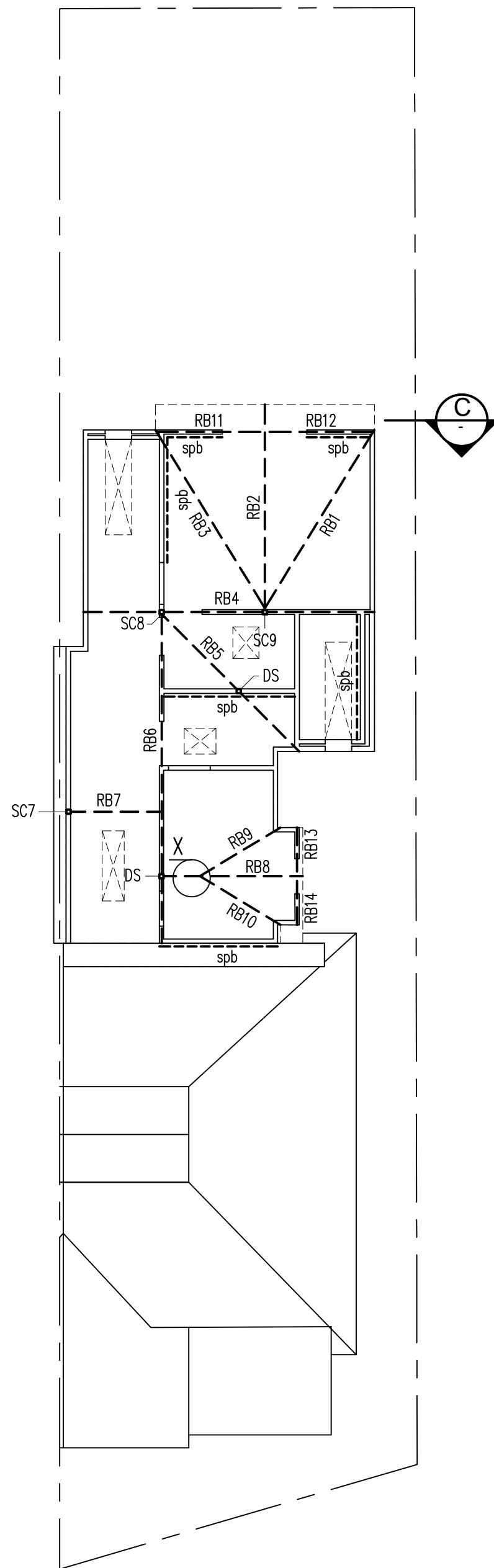
MARK	DESCRIPTION
SC1 and 2	250 UB 31
SC3 to 6	90 x 90 x 6 SHS
SC7	90 x 90 x 5 SHS
GB1	150 UC 23

Note :  
 All weather exposed steel members to be hot dipped galvanised



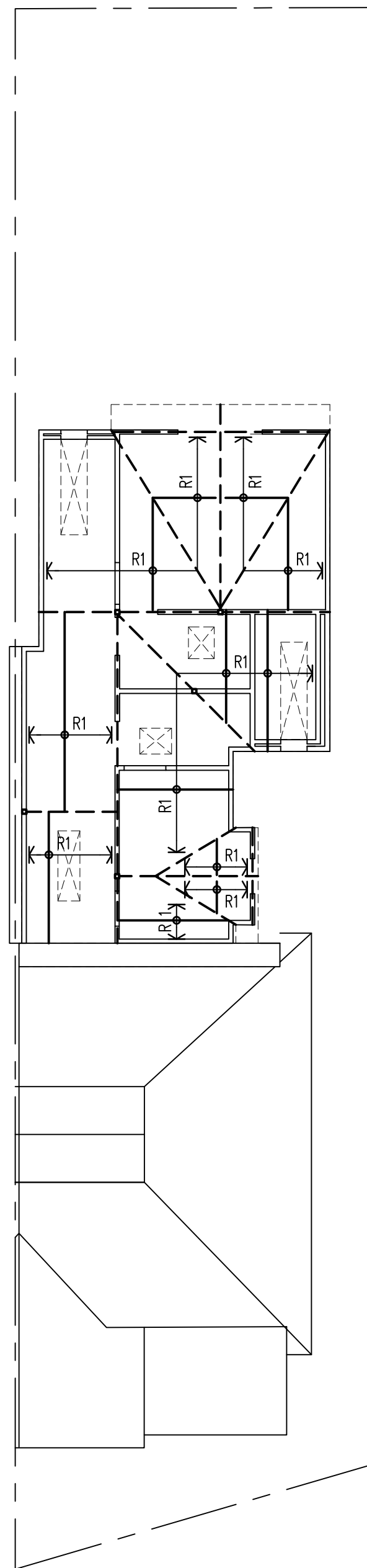
### PLAN ON FIRST FLOOR FRAMING

MARK	DESCRIPTION
1B1 and 2	250 UB 31
1B3 and 6	2/240 x 45 Hyspan
1B4 and 7	240 x 45 Hyspan
1B5	2/150 x 100 x 10 RHS H.D. galvanised
1B8	180 PFC
1J1	240 x 45 LVL @ 450 centres
1J2 to 4	200 x 45 LVL @ 450 centres
DJ	Double joist
SC8 and 9	100 x 100 F27 Hardwood
DS	Double stud



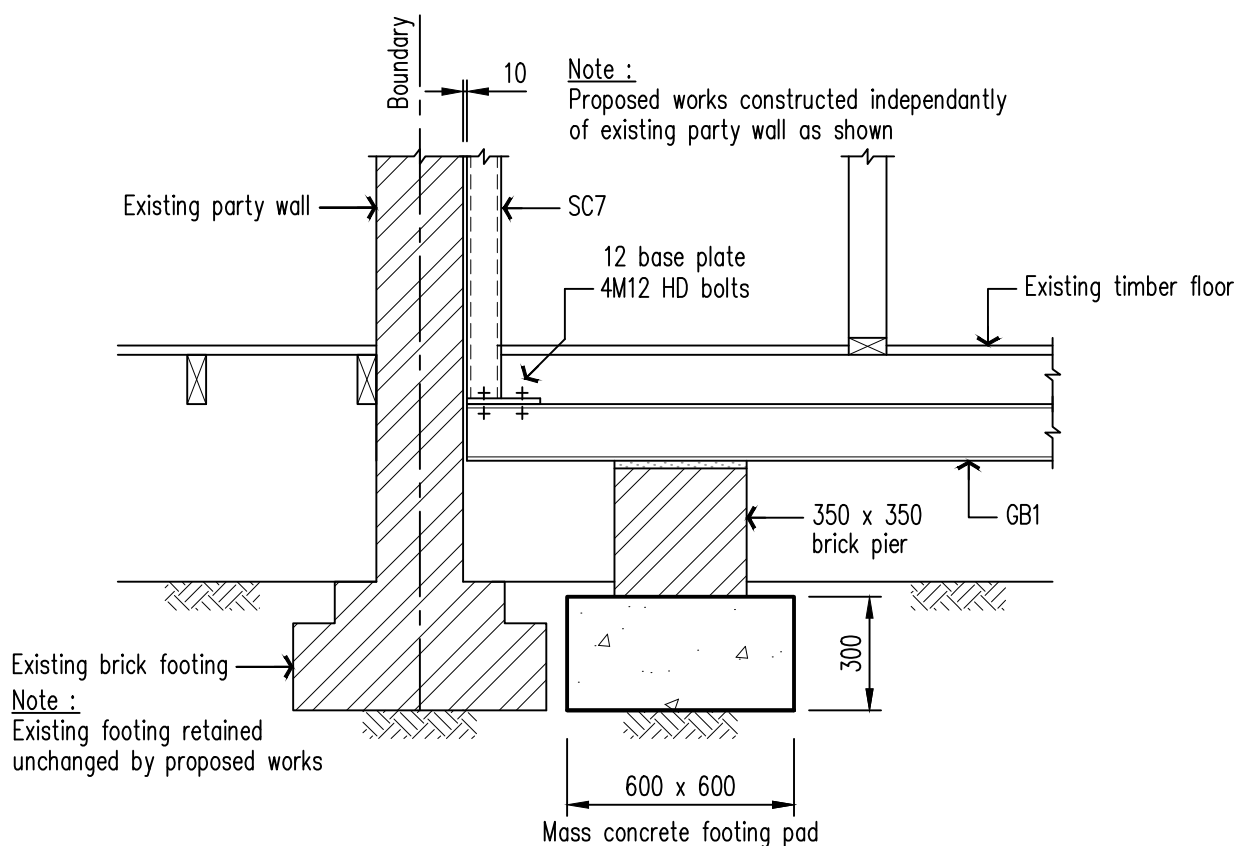
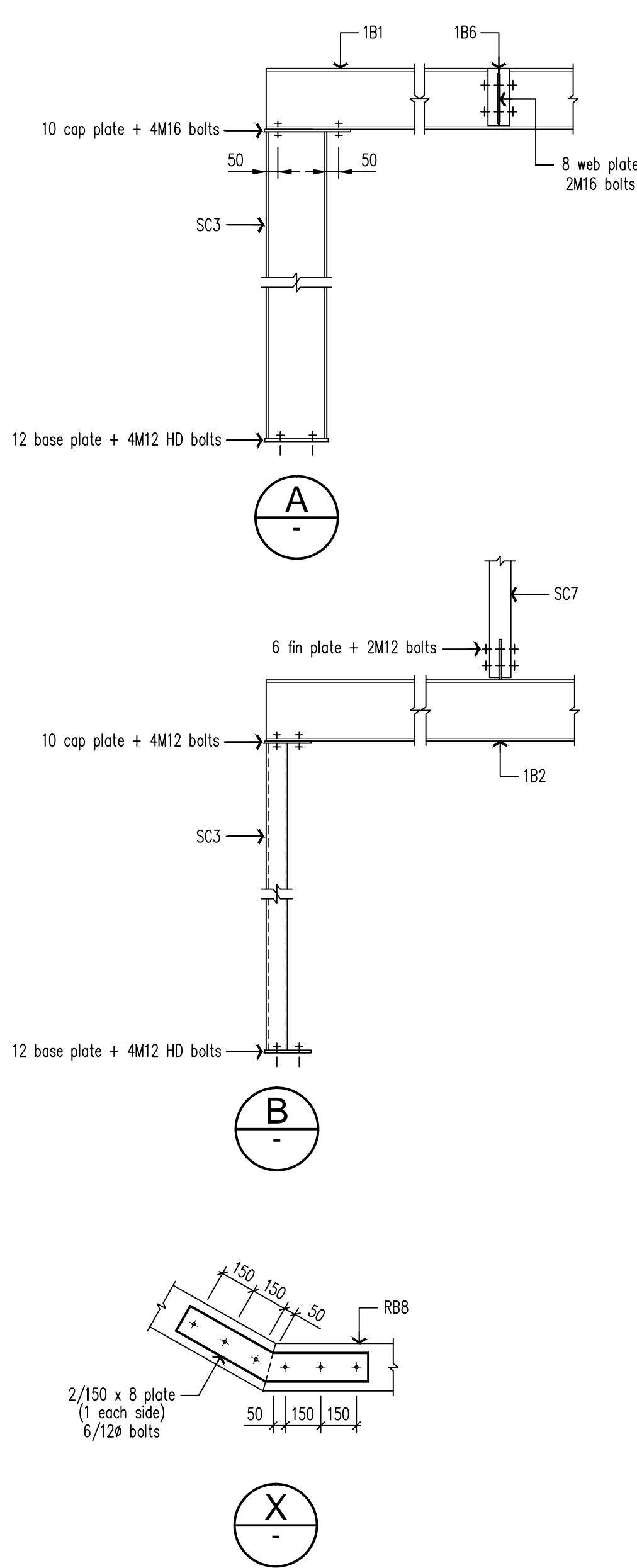
### PLAN ON ROOF FRAMING (BEAMS)

MARK	DESCRIPTION
RB1 to 4	240 x 45 Hyspan
RB5 to 14	200 x 45 Hyspan
DS	Double stud
spb	8mm structural ply bracing panel

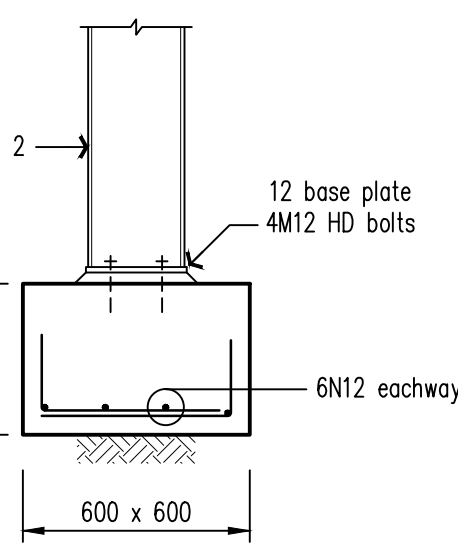
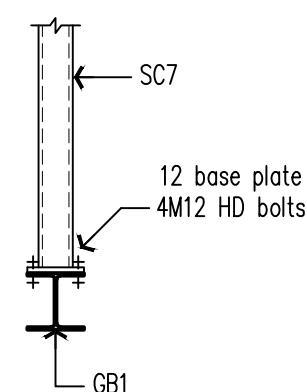


### PLAN ON ROOF FRAMING (RAFTERS)

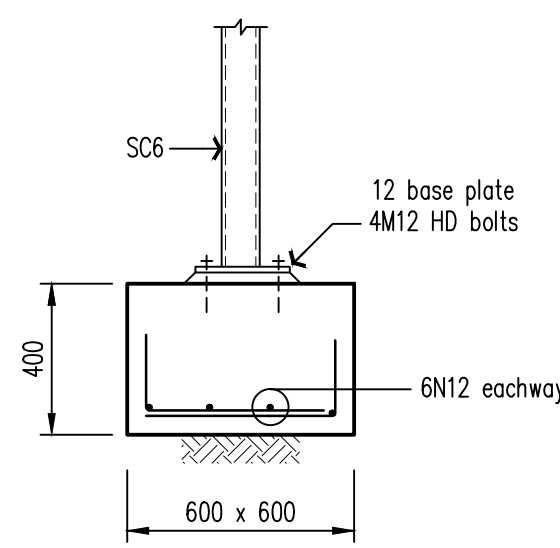
MARK	DESCRIPTION
R1	200 x 45 Hyspan @ 450 centres



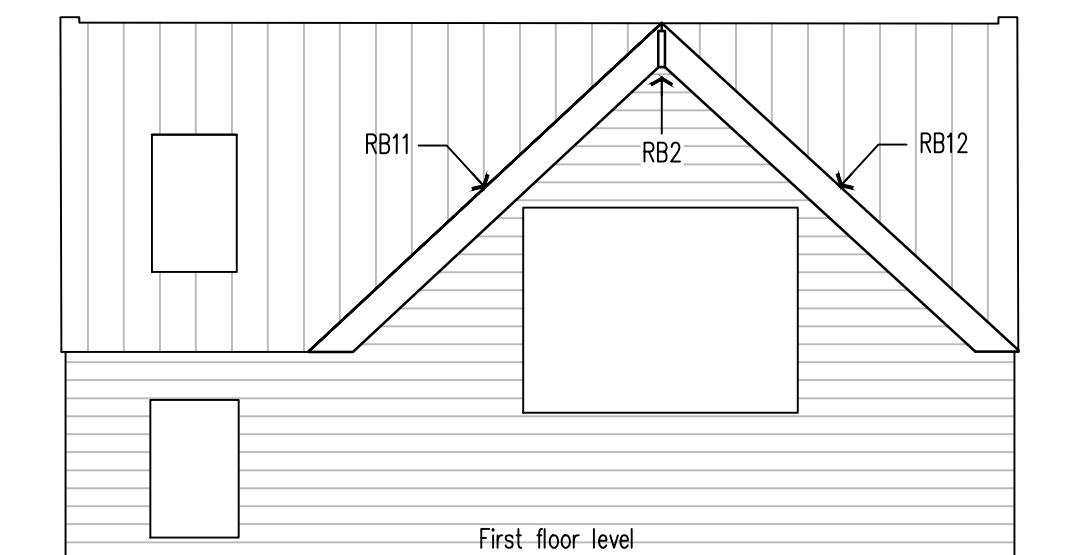
Section FP1



Section FP2



Section FP2



Diagrammatic elevation C

### CONSTRUCTION NOTES

- GENERAL**
- These drawings are to be read in conjunction with Architectural and other consultants drawings and specifications. Any discrepancies are to be referred to the Architect before proceeding with the work.
  - Dimensions shall not be obtained by scaling the structural details and all dimensions to be verified by the Builder prior to commencement of the work.
  - Refer to architectural drawings for slab levels and architectural details.
  - During construction the Builder is responsible for maintaining the structure in a stable condition without overstressing any part.
  - Comply with AS 3660 protection of building from subterranean termites.
  - All workmanship and materials to be in accordance with the Building Code of Australia.

- STRUCTURAL STEELWORK NOTES**
- All workmanship and materials to be in accordance with AS 4100, AS 1554 and for tubular members AS 1163.
  - Unless otherwise noted all structural steel to be Fy=250MPa in accordance with AS 1204, tubular AS 1163, black bolts AS 1111 and high tension bolts AS 1252.
  - All welds to be 6mm continuous fillet unless noted otherwise. Welds in accordance with AS 1554.
  - All structural steelwork bearing on masonry to be bedded on 25mm cement grout pad.
  - Except where concrete encased or where noted otherwise, all structural steelwork to be surface cleaned to remove all loose mill scale, rust, dirt, grease, etc., and given one shop coat of red-oxide zinc-chromate primer.
  - Two copies of checked workshop drawings to be submitted to the Engineer and approval obtained in writing before fabrication is commenced. Approval covers structural sufficiency of joints and members and not dimensioning accuracy.

- CONCRETE NOTES**
- All workmanship and materials to be in accordance with AS 3600 as amended, except where varied by contract documents.
  - Concrete quality to be in accordance with the following table UNLESS NOTED OTHERWISE :

ELEMENT	SLUMP	MAX SIZE AGGREGATE	CEMENT TYPE	AS 3600 F'c MPa	ADMIXTURE
PIERS	80	20	A	20	-
FOOTINGS	80	20	A	20	-
SLAB ON GROUND	80	20	A	25	-
COLUMNS	80	20	A	-	-
WALLS	80	20	A	-	-
SUSPENDED SLABS	80	20	A	32	-
STAIRS	80	20	A	32	-
BLOCKWORK CORES	230	10	A	> 12	-

- Clear concrete cover to reinforcement shall be as follows except where increased cover is required to satisfy fire rating or UNLESS NOTED OTHERWISE

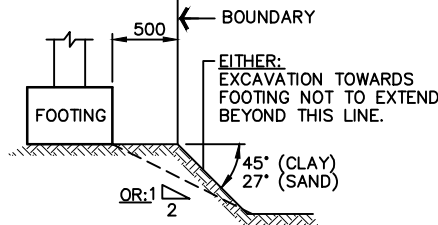
REQUIRED CLEAR CONCRETE COVER (mm) RATIONALISED FROM AS 3600									
	INTERNAL		EXTERNAL		IN CONTACT WITH GROUND				
	Wet areas and Industrial	Other	Coastal < 1km	Inland > 1 < 50km Or Indust.	Inland > 50km Or Indust.	Damp proof Membrane	No Membrane	Below water Table	Aggressive ground Water
FOOTINGS	—	—	—	—	—	40	50	75	100
PEDESTALS & COL.	40	40	—	50	40	40	50	65	75
SLABS	40	20	45	40	30	30	40	50	65
BEAMS	40	25	50	40	40	40	50	65	75
WALLS	40	20	50	40	40	40	50	65	75

- Sizes of concrete elements do not include thickness of applied finishes.
- Construction joints where not shown shall be located to the approval of the Engineer.
- Beam depths are written first and include slab thickness (if any).
- No holes or chases other than those shown on the structural drawings shall be made in the concrete members without the prior approval of the Engineer.
- All concrete shall be compacted using high frequency vibrators.
- All concrete surfaces shall be cured by maintaining them constantly damp or wet for a minimum of 7 days. Curing to commence immediately after pouring.
- Reinforcement is represented diagrammatically, it is not necessarily shown in true proportion.
- Splices in reinforcement shall be made only in the positions shown. The written approval of the Engineer shall be obtained for any other splices. Reinforcement fabric to have end and side laps of 250 min.
- All reinforcement shall be supported on steel chairs to maintain it at the correct levels, in no case shall the spacing of chairs exceed 800. Plastic bar chairs only shall be used for exposure classification B1 or worse.
- Unless otherwise shown concrete encasing to structural steelwork shall be 50 minimum thickness reinforced with F6W41. Fabric shall have 25 cover and be lapped 250 at all splices.
- Separate all concrete slab and beam surfaces from contact with masonry with two layers of "Malthoid" or equivalent.
- Reinforcement symbols are as follow :  
 R-Grade 230 plain bar in accordance with AS 1302.  
 N-Grade 410 Tempcore deformed bar in accordance with AS 1302.  
 SL-Hard drawn wire fabric in accordance with AS 1304.  
 The number following the reinforcement bar symbol is the number of millimetres in the bar diameter.
- Formwork workmanship and materials shall be in accordance with the S.A.A. Formwork Code AS 1509.
- The Engineer is to be given 48 hours notice of all impending pours.

- BRICKWORK NOTES**
- All workmanship and materials to be in accordance with AS 3700, ASA 1123, BCA 1990 and AS 1316 as amended, except where varied by contract documents.
  - Bricks to have minimum Compressive Strength of 23MPa and to be laid in 1 : 4 1/2 mortar UNLESS NOTED OTHERWISE

- BLOCKWORK NOTES**
- All workmanship and materials to be in accordance with AS 3700, AS 1500.
  - All structural blocks for retaining walls to be grade 12 double-U blocks.
  - Blocks to be fully bedded using 1 : 1/4 : 3 (cement:lime:fine aggregate by volume) mortar.
  - Blocks to be provided with openings in base for inspection and cleaning.
  - Block cores to be cleaned and filled with grout having a slump of 230 ± 30mm, 10mm aggregate and a F'c of not less than 12 MPa.
  - Block control joints 16mm wide to be provided at 8 metre centres maximum U.O.N. Dowels, R20-400 c/c, 600 long, one end greased and wrapped to be placed across control joints.

- FOUNDATIONS**
- Foundation material SAND to be consistent with uniform moisture content throughout, and have a minimum safe bearing capacity of 100kPa.
  - All residential slabs & footings to comply with AS 2870 unless detailed otherwise.
  - Excavation shall not extend below a line dipping at 45° and away from the nearest underside corner of any existing or proposed footings when excavating in clay, and 30° when excavating in sand or a 1V : 2H slope



A	01.07.23	General amendments			C.W.
REVISION	DATE				BY
<b>GEOFF HOPKINS &amp; ASSOCIATES</b> CONSULTING STRUCTURAL & CIVIL ENGINEERS 7 LATONA STREET, WEST PYMBLE N.S.W. 2073 Mobile 0419 600545 Email : ghop@bigpond.net.au					
<b>PROPOSED ALTRATIONS AND ADDITIONS TO RESIDENCE AT 166 PITTWATER ROAD, MANLY FOR B &amp; C LAWS</b>					
<b>PLANS, SECTIONS AND DETAILS</b>					
APPROVED	DATE	SCALES	DRAWN	DWG No.	REVISION
	17.02.23	1/100 1/20	C.W.	1/1	A
					JOB No.
					93632