

GENERAL

- G1. These drawings are to be read in conjunction with all architectural, and other consultant's drawings and specifications, and with such other written instructions as may be issued during the course of the contract.
- G2. Details shown on these drawings are applicable only to the areas shown on the engineering layout plan. The builder/contractor shall not assume that these details are applicable elsewhere on the site unless the Engineer is notified and written approval and revised drawings (if required) are obtained prior to any of these works commencing.
- G3. All workmanship and materials shall be in accordance with the drawings, the project specification and the current, relevant Australian Standards, the Building Code of Australia and other statutory requirements.
- G4. If any discrepancy occurs on the Engineering drawings, or between the drawings and the specifications, the builder/contractor shall, during tendering, assume the larger/greater. Any discrepancy shall be referred to the Engineer and clarification obtained before proceeding.
- G5. The builder/contractor shall confirm all relevant dimensions before commencing construction/fabrication. Engineer's drawings must not be scaled. Refer to architectural drawings for dimensions not noted on the engineering drawings.
- G6. No substitutions shall be made without the written approval of the Engineer.
- G7. The builder shall maintain the works in a safe, stable condition and ensure that no part shall be over-stressed during construction.
- G8. If, at any time prior to practical completion, the builder/contractor becomes aware of any sign of distress, excessive settlement or deflection, conflict of components, or any other indication whatsoever of actual or potential damage to the works, or any part thereof, the builder/contractor shall notify the Engineer and confirm such notice in writing as soon as practicable.
- G9. A minimum of 24 hours notice is required for all engineering inspections.

FOUNDATIONS

- F1. All workmanship and materials shall be in accordance with AS 2870.1 and AS3798.
- F2. These drawings are to be read in conjunction with the Engineer's Soil Report for additional information not noted on the drawings.
- F3. The site of the works shall be stripped of all topsoil and organic material.
- F4. Foundation material shall be inspected and approved before laying membranes, fixing reinforcement or ordering concrete.
- F5. Strip and pad footings are to be founded in original undisturbed ground at the depths noted on the drawings, or when not noted on the drawings, in the Engineer's Soil Report.

SLABS ON GROUND

- SG1. All workmanship and materials shall be in accordance with AS 2870.1 and AS3798.
- SG2. The ground below slabs shall be stripped of all debris, building rubble, surface vegetation and topsoil, then proof-rolled prior to placement of selected filling material. "Soft-spots" shall be removed and replaced with compacted crushed rock or approved fill in accordance with AS2870.
- SG3. Slabs shall be laid on a 50 mm layer of leveling sand over an approved vapor barrier of 0.2mm minimum thickness. The vapor barrier shall be lapped a minimum of 200 mm at joints, taped at punctures and service and pipe penetrations and shall extend under and to the sides of all slabs, beams and thickenings.
- SG4. Filling material shall be either of the following, UNO
 - Clean, granular material, up to 600 mm deep, compacted in layers not exceeding 300 mm thickness.
 - Clean, non-granular material, up to 400 mm deep, compacted in layers not exceeding 150 mm thickness.
- SG5. Controlled fill shall be placed in accordance with AS3798 and shall be compacted using a vibrating roller or plate such that excavations through the area maintain their shape. The minimum compaction obtained shall be 98% of the maximum dry density, measured in accordance with the modified compaction test (Test 12a) of AS1289. Where applicable, the moisture content of the filling material shall be adjusted so as to ensure the required compaction is obtained.
- SG6. The building is to be protected from subterranean termites in accordance with the methods specified by the relevant local government body or AS3660.
- SG7. Trench mesh shall be laid continuously and spliced where necessary with a lap of 500 mm and shall be overlapped by the width of the fabric at corners and intersections. The ends of the trench mesh are to be terminated with a crossbar.
- SG8. Fabric shall be placed near the top of the slab and shall have a nominal cover of 20 mm, unless noted otherwise. Fabric shall be lapped a minimum of two wires plus 25 mm and shall be set out such that no more than three thickness' of fabric occur at any location.
- SG9. Hot water heating pipes may be embedded in the slab provided the slab thickness is increased by 25 mm and laid on F52 mesh.
- SG10. The ground surrounding the slab shall have its surface at least 150 mm lower than the slab surface and be graded away from the slab edge to the site drainage system.
- SG11. The builder shall inform the owners of the requirement to maintain the slab and surrounding areas in accordance with the provisions of Appendix B of AS2870.1 and the CSIRO publication "Guide to Homeowners on Foundation Maintenance and Footing Performance".

BRICKWORK AND BLOCKWORK

- B1. All workmanship and materials shall be in accordance with AS3700.
- B2. Bricks shall have a minimum characteristic unconfined compressive strength of 30 MPa, UNO. Blocks shall have a minimum characteristic unconfined compressive strength of 15 MPa, UNO.
- B3. Mortar shall consist of 1 part cement, 1 part hydrated lime and 6 parts well graded sand.
- B4. Load-bearing masonry shall have full-bed joints, UNO. Non-load bearing walls shall be kept 20 mm clear of the underside of floors and shelf angles.
- B5. The nominal mix proportions for grout for filling the cavity in grouted reinforced brick masonry shall be 1 part Portland cement, 2.5 parts sand and 1.5 parts 10 mm aggregate. Sand and course aggregate shall comply with the relevant requirements of AS3700. Sufficient water shall be added to ensure that the grout flows into and fills all parts of the grout space. Waterproof additive required where wall exposed to weather. Cavity to be filled in stages, UNO.
- B6. Vertical control joints shall comply with Technical Note No. 61 published by the Cement and Concrete Association of Australia and shall be located as described in that publication or as shown on the drawings. Joints shall be kept free of non-compressible material.
- B7. All cavities below ground shall be grout filled.
- B8. Concrete beams and slabs shall be separated from supporting brickwork by 2 layers of malthoid or similar approved membrane on top of mortar leveling screed.
- B9. All steelwork projecting into cavities shall be hot-dipped galvanised, UNO.

CONCRETE

- C1. All workmanship and materials shall be in accordance with AS3600.
- C2. The characteristic compressive strength (F'c) of concrete shall be one of the following

Mass concrete, footings	20 MPa
Slabs-on-ground	25 MPa
Columns, suspended slabs & beams	32 MPa
Precast wall panels	32 MPa

Specified concrete strengths are required at 28 days, UNO. Maximum slump 80 mm. Nominal maximum aggregate size 20 mm.
- C3. Concrete sizes shown are minimum sizes and do not include finishes. Sizes must not be reduced or holes formed or made in any member without the Engineer's approval.
- C4. Depths of beams are given first and include slab thickness. Slabs and beams are to be poured together.
- C5. Minimum cover (mm) to all reinforcement, including fitments, shall be as follows, UNO

	Surface in contact with ground	Surface in interior environments	Above ground exterior environment
Footings & piers	50	-	-
Strip footings	50	-	-
Slabs-on-ground	40*	20	40
Insitu beams & columns	-	20	40
Suspended slabs	-	20	40
Precast elements	40	20	40

* 30 mm if slab is laid on an approved vapor membrane. See note SG3.

- C6. Concrete shall be cast against forms complying with AS3610. Conduits and pipes shall not be placed within concrete cover. Concrete shall be compacted using mechanical vibration. Vibration of forms is not acceptable and concrete shall not be spread by vibration. The period for continuous wet curing of slabs, for effective control of shrinkage cracking, is to be seven clear days minimum.
- C7. Formwork shall comply with AS3610 and is to be left in place for the following times, UNO

Beams soffits	28 days
Beam sides	4 days
Slabs	10 days (<4.5m span, formwork removed, slab re-propped)
Props under slabs	21 days (otherwise)
Walls and columns	4 days
- C8. All reinforcement and inserts shall be supported and held in the design location by approved spacers or ties. Bar chairs shall be placed at 1000 mm minimum centres in two directions, UNO.
- C9. Symbols on the drawing for reinforcement are as follows

N	Grade 500 MPa deformed reinforcing bars to AS1302
F	Hard-drawn steel wire reinforcing fabric to AS1304
R	Grade 250 MPa plain reinforcing bars to AS1302
TM	Hard drawn steel trench mesh to AS1304

The number immediately following the bar grade symbol represents the nominal diameter (mm). The figure following the fabric symbol is the reference number. The number preceding the trench mesh symbol indicates the number of main wires.

- C10. Splices in reinforcements shall be made only in the positions shown or as otherwise approved by the Engineer. Welding of reinforcement shall not be permitted unless shown on the structural drawings.
- C11. Provide 2 No. N12 x 2000 mm long bars diagonally across re-entrant corners in slabs and walls (alternatively use 3-L11TM x 2000 mm long) tied under top fabric.
- C12. Construction joints shall be properly formed and used only where approved or permitted by the Engineer. Provide water stops in all construction joints of walls and slabs exposed to weather or water. Sawn joints shall be made at a time appropriate to the concrete mix and climatic conditions (generally between 10 and 20 hours after placing of concrete).
- C13. Concrete must be kept free from supporting brickwork by two layers of malthoid or similar approved membrane. Vertical faces of concrete to be kept free by a 12 mm thick strip of bituminous caneite. Brickwork must not be built on concrete slabs or beams until formwork supporting the same has been removed.

STRUCTURAL STEELWORK


- S1. All workmanship, including fabrication and erection, and materials shall be in accordance with AS4100.
- S2. Two copies of shop detail drawings are to be submitted to the Engineers for review and approval of the same obtained before commencing fabrication. Engineering approval does not cover interpretation of the drawings, dimensional accuracy or steel fabrication.
- S3. Structural steel grades shall be

Grade 300PLUS	Hot-rolled and welded products
Grade 350	SHS & RHS products
Grade 250	CHS products
Grade 250	Plate material
- S4. All welding shall be in accordance with AS1554. All welds shall be 6 mm continuous fillet welds, GP category, laid down with using E41xx/W40x consumable, UNO. Butt welds must develop the full tensile strength of the member.
- S5. Bolts shall be M20 4.6/S, with a minimum of 2 bolts per connection in 1.5 mm clearance holes, UNO.
- S6. Holding-down bolts shall be galvanized M20 4.6/S UNO.
- S7. Connections not specifically detailed shall be in accordance with the appropriate connection detailed in the AISC's Standardised Structural Connections Manual".
- S8. All cleat and gusset plates are to be 8 mm thick, UNO. All cleats and drillings for fixing of timber members and other materials and finishes to steelwork are to be provided by the fabricator.
- S9. The ends of tubular members shall be sealed with 3 mm thick plates, UNO. Tubular members to be galvanised shall be adequately vented.
- S10. All bolts and structural steel, including lintels supporting masonry, exposed to the weather shall be hot-dipped galvanised, or approved equivalent, UNO.
- S11. All timber to steel connections shall use galvanised or nickel-plated coach bolts, UNO.
- S12. Camber to structural steel roof beams, trusses, portal frames, etc, is to be 5 mm for every 2000 mm of span, UNO.
- S13. Purlins and girts shall be in accordance with AS/NZS4600, galvanised and installed in accordance with the manufacturer's recommendations.
- S14. Structural steel to be concrete encased shall be wrapped with F41 mesh. The gap between the structural steel and the mesh shall be 25 mm. External cover to the mesh shall be 50 mm.
- S15. Structural steel installed below ground shall be encased by concrete 75 mm minimum all round.
- S16. A minimum 150 mm end-bearing and leveling grout shall be provided for steel members seated on masonry, UNO.
- S17. Coatings damaged during transport or erection shall be made good.

TIMBER

- T1. All workmanship and materials shall be in accordance with AS1720. Unless noted otherwise, all timber framing, bracing and hold-down details shall comply with AS1684 Residential Timber-Framed Construction Manuals. Any discrepancy shall be referred to the Architect or the Engineer.
- T2. All bolted connections shall use washers under the bolt head and nut. All external bolts, nuts and washers shall be hot-dipped galvanized. No knots or defects shall occur with 150 mm of the bolt group or connectors. Where possible, re-tighten bolts after 6 weeks and again after 12 months.
- T3. Member sizes specified on the drawings give the depth first, followed by the width. Such dimensions are nominal only.
- T4. Make good preservative treatment where checkouts, holes and cuts expose untreated timber.
- T5. All external timbers shall be durable and suitable for external use and/or comply with the appropriate hazard level for the specific service conditions in which the external timber is to be used.
- T6. No penetrations or chases, other than those shown on the engineering drawings, shall be made without prior approval of the Engineer.
- T7. Bolts shall be reference as follows, e.g. 2 M12 4.6/S

2	number of bolts
M12	nominal diameter (mm) of bolts
4.6	strength grade
S	snug tight bolting procedure
- T8. One set of truss manufacturer's computations and layout drawings are to be submitted to the Engineers for review, not less than 48 hours prior to the commencement of fabrication.
- T9. Timber framing used in termite declared areas shall be appropriately treated (e.g. H2S, H2 LOSP, etc) in accordance with the manufacturer's or supplier's recommendations to the meet the specific termite resistance required.

REV	DESCRIPTION	BY	DATE	Design:	Project:	Job No:	 <h2 style="margin: 0;">Simon Anderson</h2> <h3 style="margin: 0;">Consultants</h3> <p style="margin: 0; font-size: small;">CIVIL STRUCTURAL PROJECT ENGINEERS</p>	6B, 267 Ryrie Street, Geelong, Vic 3220	
-	-	-	-	Drawn:	<h1 style="margin: 0;">PROPOSED RESIDENCE - UNIT 2</h1>	Drawing No:		S1	T: 03 5224 1975
				Checked:		Revision No:		-	ACN 615 170 600
				Date: MAY 2019		Client:			geelong@simonandersonconsultants.com.au
							BAIRNSDALE SALE GEELONG		

GENERAL NOTES

- EXISTING SEWER & STORMWATER DEPTHS & LOCATIONS TO BE CONFIRMED BY BUILDER ON SITE
- IT IS RECOMMENDED THAT ALL GROUND SLOPE AWAY FROM THE BUILDING FOUNDATIONS WITH A MINIMUM FALL OF 50mm AT 1.0m DISTANCE FROM THE BUILDING
- ANY SOFT SPOTS CREATED BY THE REMOVAL OF TREES (or EXISTING SERVICES/FOOTINGS), ARE TO BE BACKFILLED WITH COMPACTED GRANULAR FILL

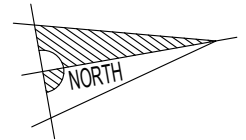
- CONCRETE SLABS SHOULD BE ALLOWED TO FULLY CURE (28 DAYS) BEFORE THE PLACEMENT OF BRITTLE FLOOR COVERINGS (TILES).
- DUE TO THE DIFFERING AGE AND CONSTRUCTION BETWEEN NEW AND OLD FOOTING SYSTEMS, SOME DIFFERENTIAL MOVEMENT MAY BE EXPECTED BETWEEN THE TWO.
- THE BUILDER AND OWNER SHALL BE AWARE OF THE IMPORTANCE OF SITE DRAINAGE BOTH DURING AND AFTER CONSTRUCTION. IN HIGHLY REACTIVE SITES IT

- IS CRUCIAL FOR GROUND MOISTURE CONTENT TO BE STABILISED (MAINTAINED) FOR THE LIFE OF THE STRUCTURE IT SUPPORTS, AS VARYING MOISTURE CONTENT SUBSTANTIALLY INCREASES THE LIKELIHOOD OF FOOTING MOVEMENTS AND SUBSEQUENT DAMAGES.
- CONSTRUCTION SHOULD BE UNDERTAKEN DURING THE DRYER MONTHS. ALTERNATIVELY AN APPROPRIATE SUB-SOIL DRAINAGE SYSTEM MAY BE REQUIRED TO DE-WATER THE SITE PRIOR TO CONSTRUCTION
- INTERNAL SLAB PANELS CAN BE FOUNDED ON A MAXIMUM OF 600mm

NON-REACTIVE, WELL COMPACTED FILL MATERIAL. IF THE TOTAL DEPTH OF ADDITIONAL SITE FILL AND EXISTING FILL IS GREATER THAN 600mm PLEASE CONTACT ENGINEER FOR RE-DESIGN

SITE CLASSIFICATION 'XX'

REFER SOIL REPORT NO. XX
PREPARED BY SIMON ANDERSON CONSULTANTS P/L
(DATED XX / XX / XXXX) FOR ADDITIONAL INFORMATION
NOT NOTED ON DRAWINGS



100 THICK R.C. SLAB
SL82 MESH TOP F_c=25MPa

150mm THICK RC POOL / SPA
32MPa MIN - N/S12 REINFORCEMENT 40 COVER TYP.
REFER DETAILS

SUB-FLOOR MEMBER SCHEDULE

MARK	DESCRIPTION	COMMENT
BR1	130 x 63 hySPAN LVL	1.3m MAX SPAN - (CONTINUOUS OVER PIERS)
BR2	2 / 130 x 45 hySPAN LVL	2.2m MAX SPAN - (CONTINUOUS OVER STUMPS)
BR3	2 / 200 x 45 hySPAN LVL	
FJ2	HJ200 45 hyJOIST	3.0m MAX SPAN @ 450 c-c (CONTINUOUS)
DB1	2 / 190 x 45 MGP10 H3 TREATED	2.3m MAX SPAN
DJ1	140 x 45 MGP10 H3 TREATED	2.3m MAX SPAN @ 450 c-c
WH1	140 x 45 MGP10 H3 TREATED WHALER	FIXED WITH 10mm MASONRY ANCHORS @ 600c-c

FOOTING SCHEDULE

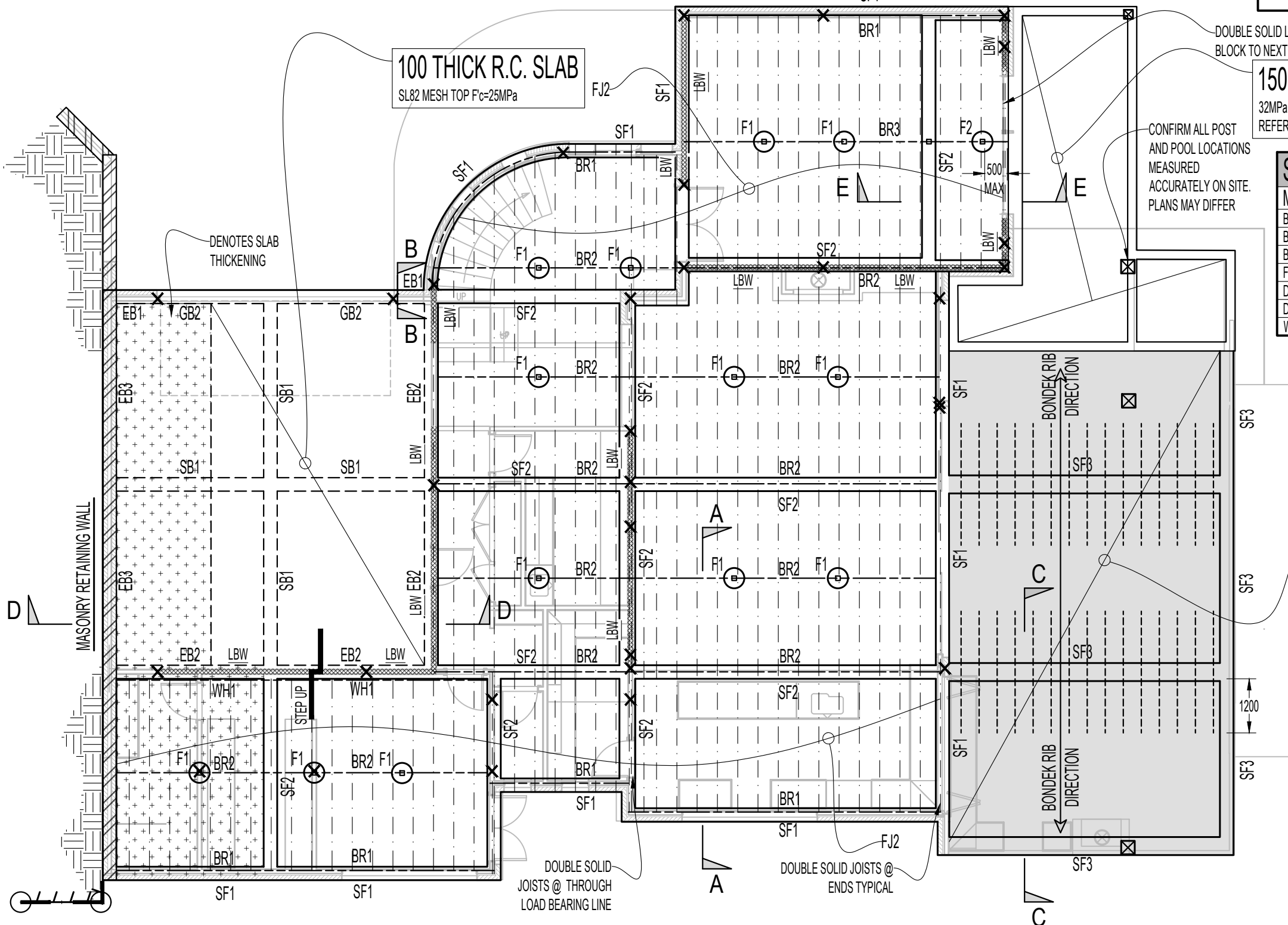
MARK	DESCRIPTION	COMMENT
F1	450Ø x 1200D PAD FOOTING	FOUND INTO ROCK
F2	450Ø x 1200D PAD FOOTING	FOUND INTO ROCK
SF1	400W x 900D STRIP FOOTING	REFER S3 REINFORCEMENT TABLE
SF2	400W x 900D STRIP FOOTING	REFER S3 REINFORCEMENT TABLE
SF3	400W x 900D STRIP FOOTING	REFER S3 REINFORCEMENT TABLE

150mm THICK BONDEK SUSPENDED SLAB

32MPa MIN - 0.75BMT
SL92 MESH TOP; SL82 MESH BOTTOM
N16 TOP BARS OVER SUPPORTS AS SHOWN @ 400 c-c

LEGEND

- EXTENT OF DECK / OUTDOOR AREA
- INTERNAL LOAD BEARING WALL ABOVE
- PAD/STUMP FOOTING REFER SHEET S3 FOR DETAILS
- LOAD BEARING LOCATIONS
- STUMP CROSS BRACING REFER SHEET S5 FOR DETAILS
- ALL SITE DRAINAGE DURING & AFTER CONSTRUCTION TO GRADE AWAY FROM BUILDING



REV	DESCRIPTION	BY	DATE

Design: _____
 Drawn: _____
 Checked: _____
 Date: MAY 2019

Project: **PROPOSED RESIDENCE - UNIT 2**
 Client: _____

Job No: _____
 Drawing No: **S2**
 Revision No: _____

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GENERAL NOTES - SLABS

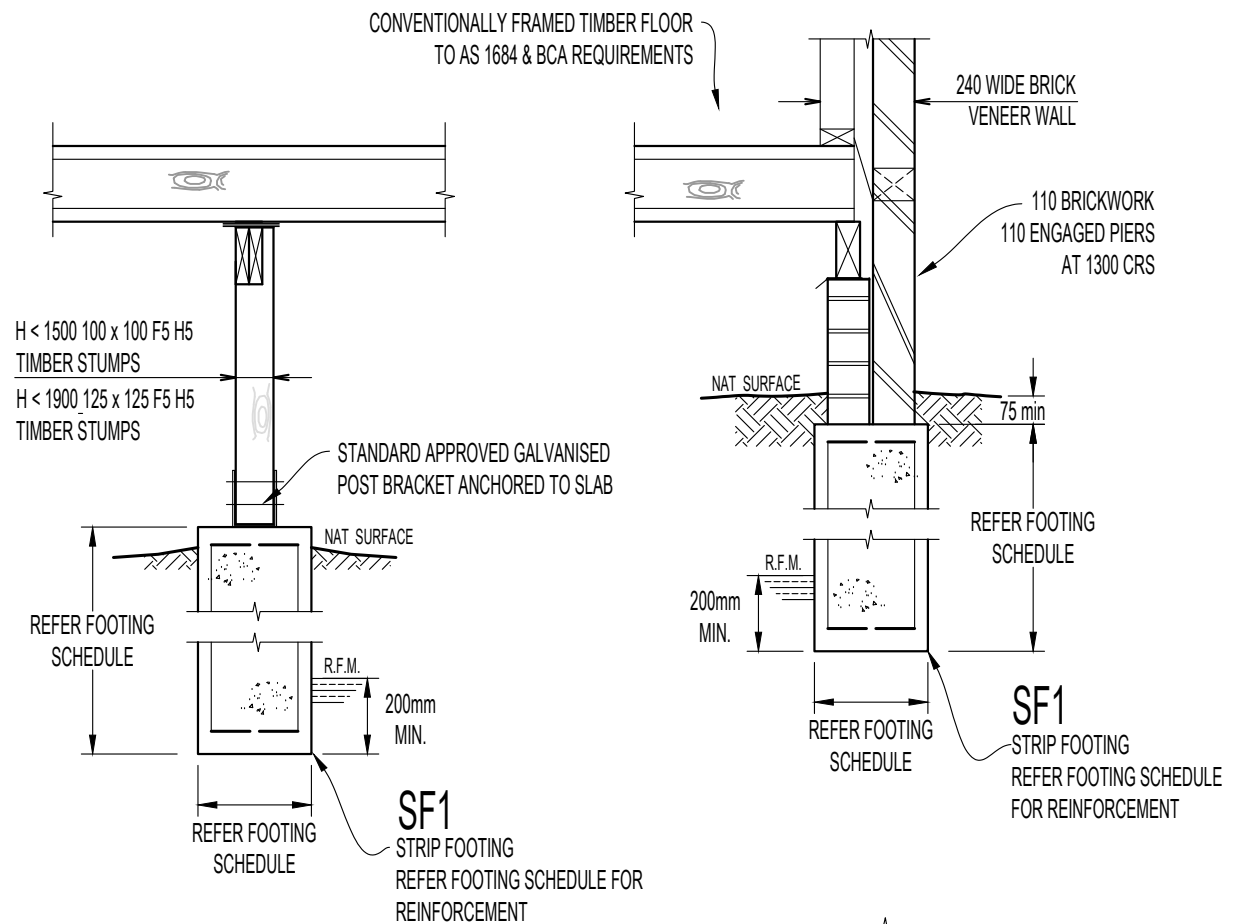
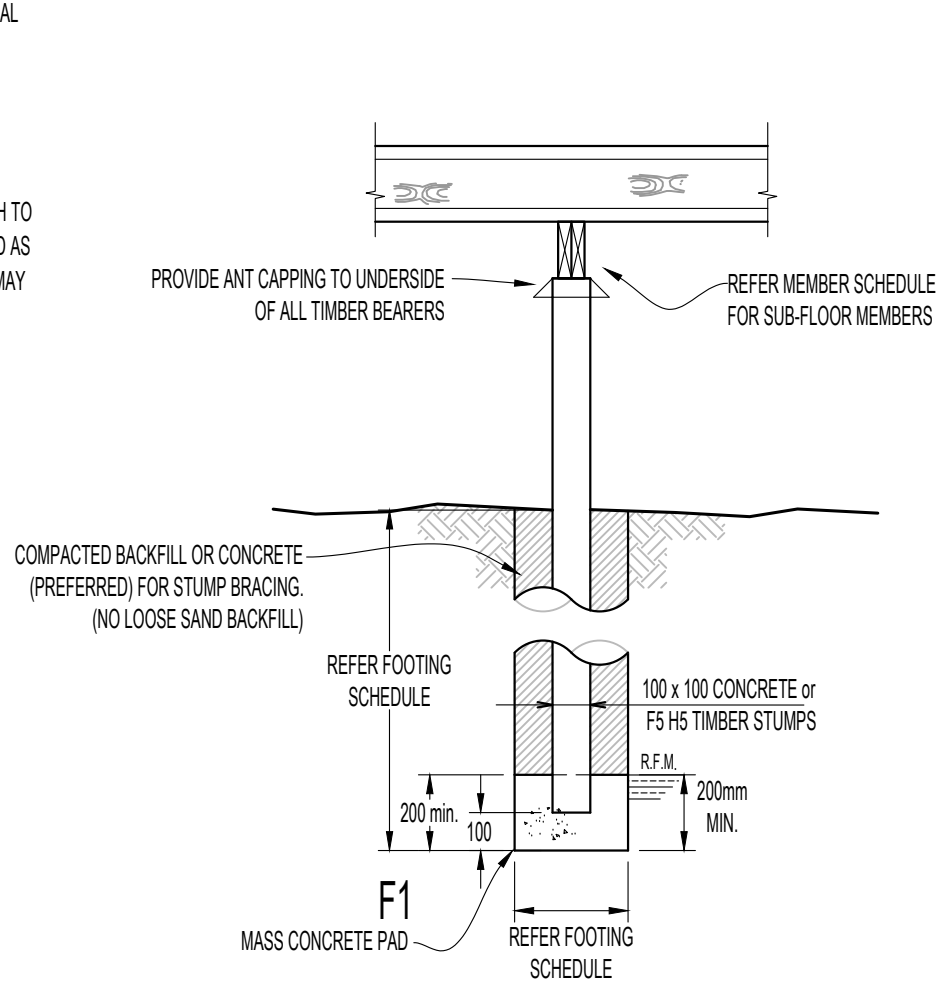
1. R.F.M. RECOMMENDED FOUNDING MATERIAL, REFER GEOTECHNICAL REPORT FOR DETAILS.
2. WHERE BEAM WIDTH IS INCREASED, AN EXTRA BOTTOM BAR OF EQUIVALENT SIZE SHALL BE USED FOR EACH 100mm ADDITIONAL WIDTH.
3. WHERE BEAM IS INCREASED GREATER THAN THE REQUIRED DEPTH TO REACH R.F.M. THE BOTTOM REINFORCEMENT SHALL BE INCREASED AS PER TABLE BELOW. ALTERNATIVELY, 15 MPa BLINDING CONCRETE MAY BE UTILISED BELOW THE SPECIFIED DEPTHS TO REACH THE R.F.M. REFER FOOTING DEPTH ALTERNATIVE DETAIL
4. 'X' NUMBER OF BARS, TO SUIT FOOTING WIDTH, 1 BAR PER 100mm WIDTH. (I.E. 300 WIDE FOOTING REQUIRES 3-L11TM)

BEAM REINFORCEMENT TABLE	
BEAM DEPTH	MINIMUM REINFORCEMENT
400 - 600	X-L11TM
600 - 800	X-L12TM
800 - 1000	2 / X-L11TM OR X-N16
1000 +	ENGINEER DESIGNED

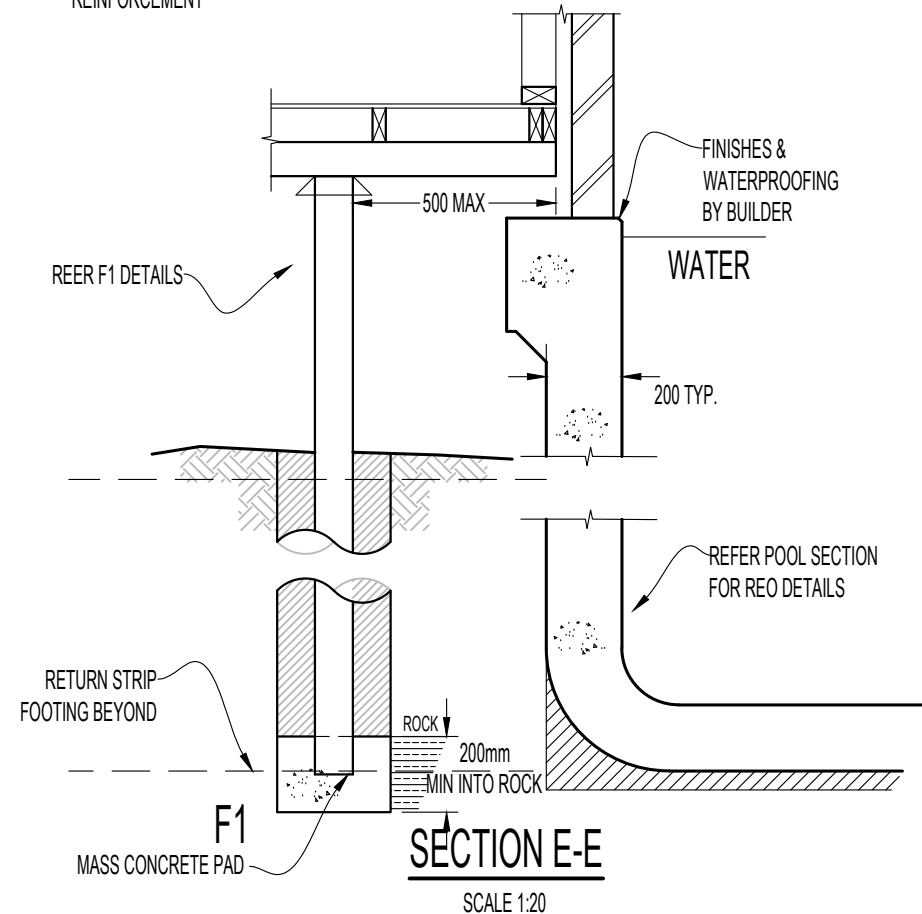
STRIP REINFORCEMENT TABLE	
FTNG DEPTH	MINIMUM REINFORCEMENT
400	X-L11TM
600	X-L12TM
700	X-N16 OR 2 / X-L11TM

ALL FOOTINGS MUST BE FOUNDED BELOW ANY FILL AND INTO NATURAL UNDISTURBED DENSE SAND OR ROCK AS SPECIFIED (R.F.M)

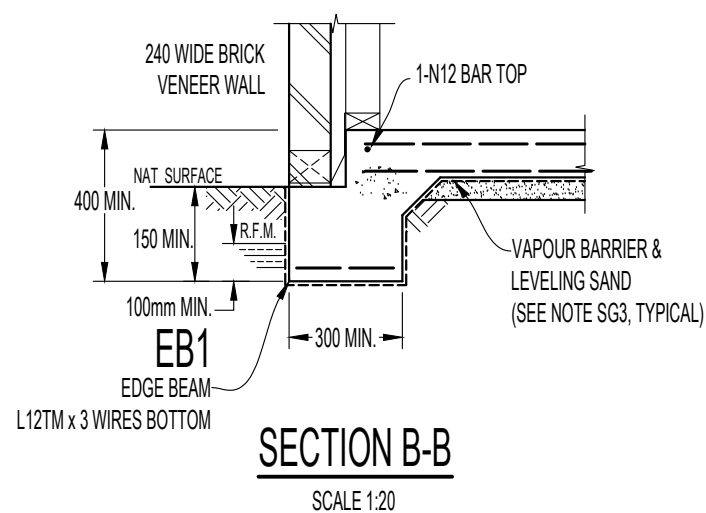
*THIS MATERIAL IS APPROXIMATELY 700mm BELOW NATURAL SURFACE. ACTUAL BEAM DEPTHS MAY VARY - REFER TO SOIL REPORT AND CUT/FILL LEVELS.



SECTION A-A
SCALE 1:20



SECTION E-E
SCALE 1:20



SECTION B-B
SCALE 1:20

REV	DESCRIPTION	BY	DATE

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	Client:	Revision No:
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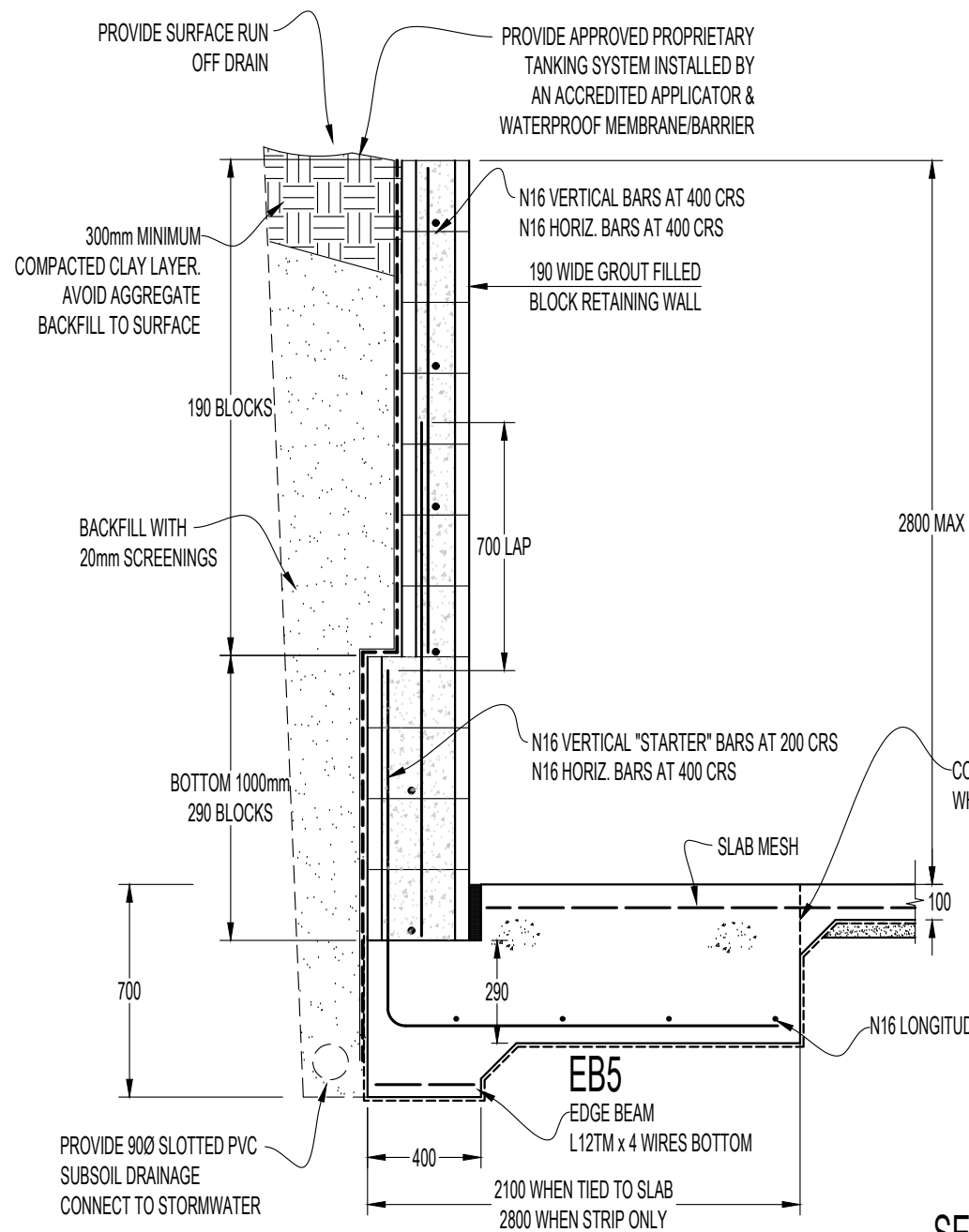
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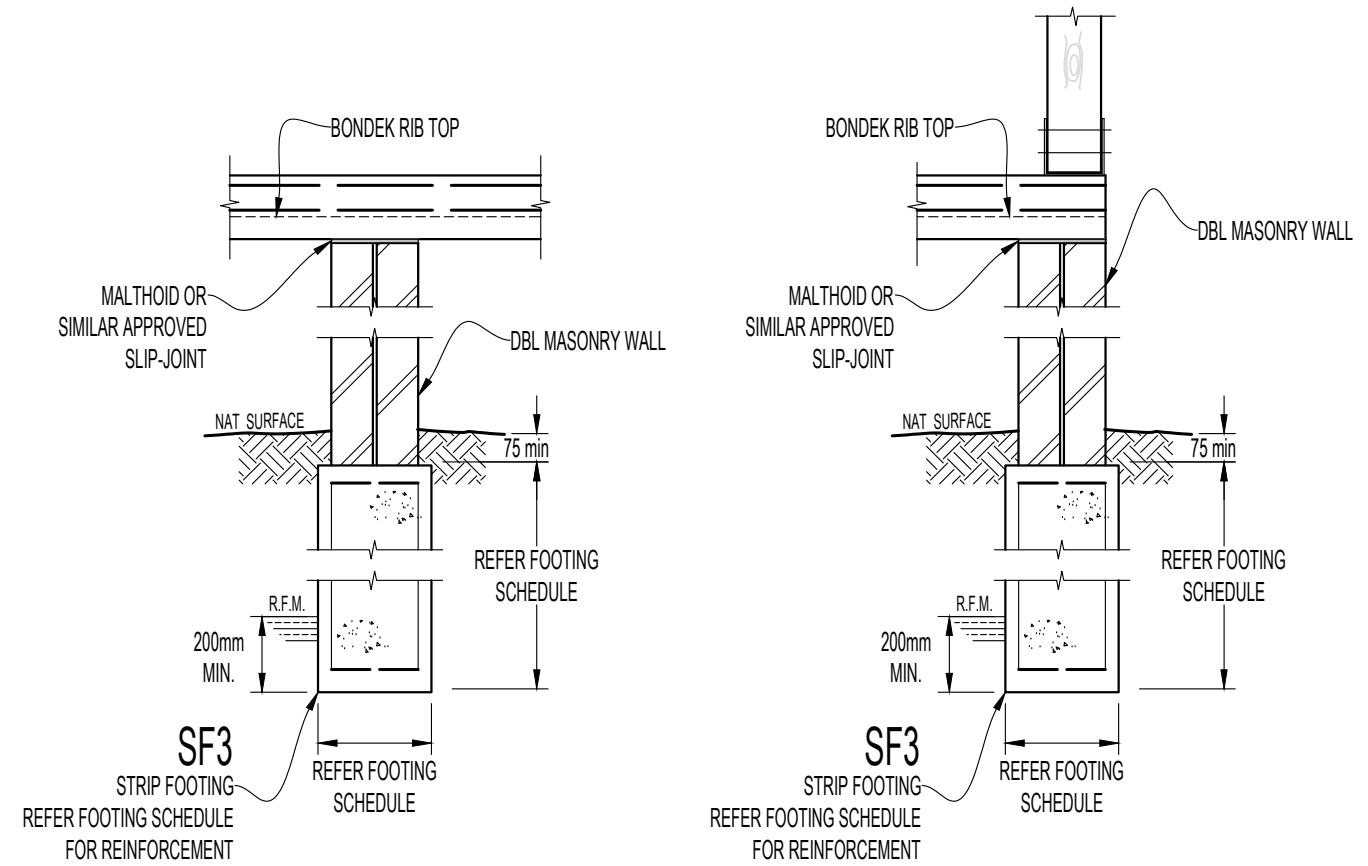
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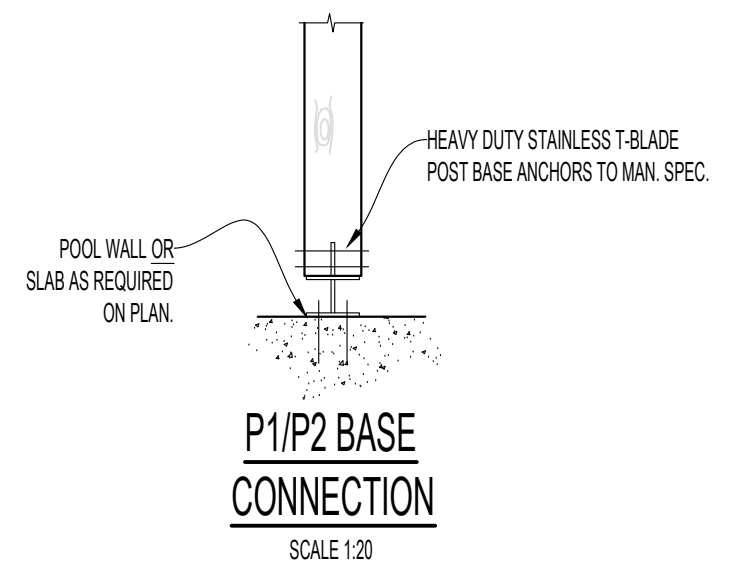
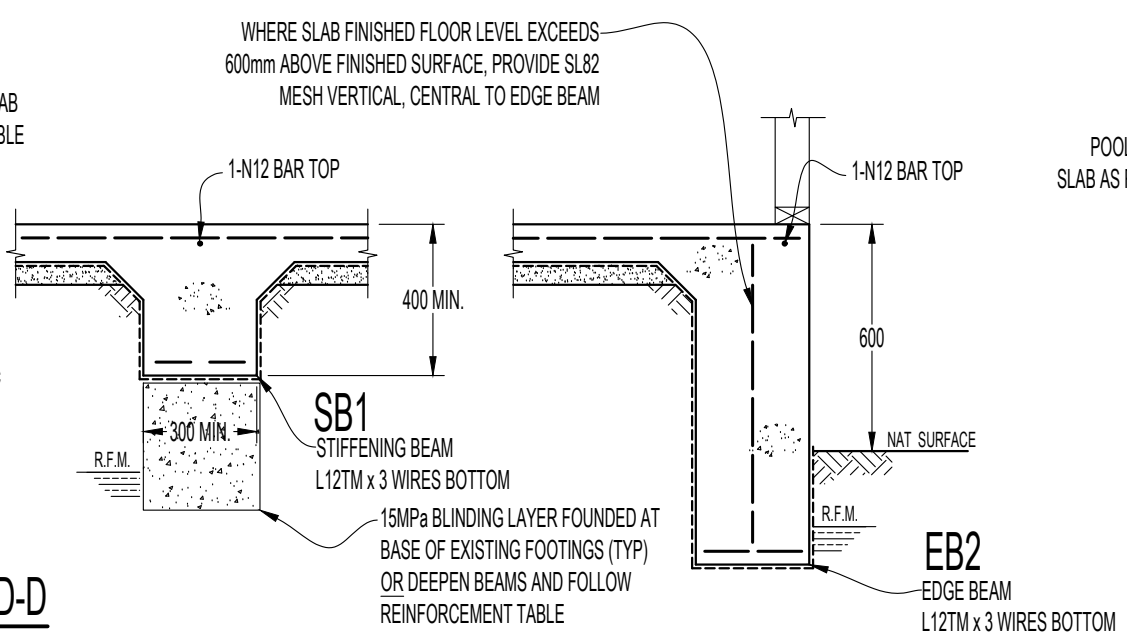
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SECTION D-D
SCALE 1:20



SECTION C-C
SCALE 1:20



P1/P2 BASE CONNECTION
SCALE 1:20

REV	DESCRIPTION	BY	DATE

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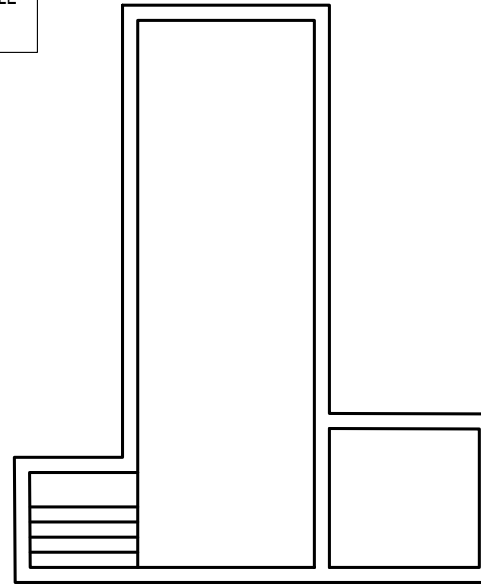
POOL GENERAL NOTES:

1. MINIMUM VERTICAL RADIUS TO BE 150mm.
2. MINIMUM RADIUS IN PLAN NOT TO BE LESS THAN 450mm UNLESS HORIZONTAL REINFORCEMENT IS CONTINUOUS AROUND CORNER.
3. ALL POOLS TO BE FITTED WITH HYDROSTATIC VALVE.
4. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH BCA 2005
5. CONCRETE SHALL BE SPRAYABLE WITH 40MPa MIN STRENGTH WATERPROOF MIX DESIGN.
6. POOL FLOOR TO BEAR ON APPROVED NATURAL HOMOGENEOUS FOUNDATION SOIL GIVING A UNIFORM BEARING PRESSURE OVER THE ENTIRE BASE OF THE POOL AND CLASSIFIED AS A, S, M, OR M-D ACCORDING TO AS2870 -1996
7. POOL WALLS MAY BE FREE STANDING ABOVE FINISHED GROUND SURFACE LEVEL PROVIDED HORIZONTAL BARS ARE SPACED AT 200 CRS AS SHOWN
8. THIS DESIGN COMPLIES WITH THE BCA, AS3600, AS3725 AND AS2783
9. THE POOL EXCAVATION SHALL NOT UNDERMINE EXISTING BUILDING FOOTINGS ADJACENT POOL. EXCAVATION TO BE LOCATED ABOVE THE 1:1 ANGLE OF REPOSE TO THE UNDERSIDE OF THE EXISTING FOOTINGS.
10. PROVIDE MIN LAP OF 400 TO N12 REINFORCING BARS.

NOTE: ALL BARRIERS, GATES AND SAFETY DEVICES BY OTHERS AND REMAIN THE RESPONSIBILITY OF THE OWNER/BUILDER TO INSTALL AND MAINTAIN TO THE APPLICABLE STANDARDS.

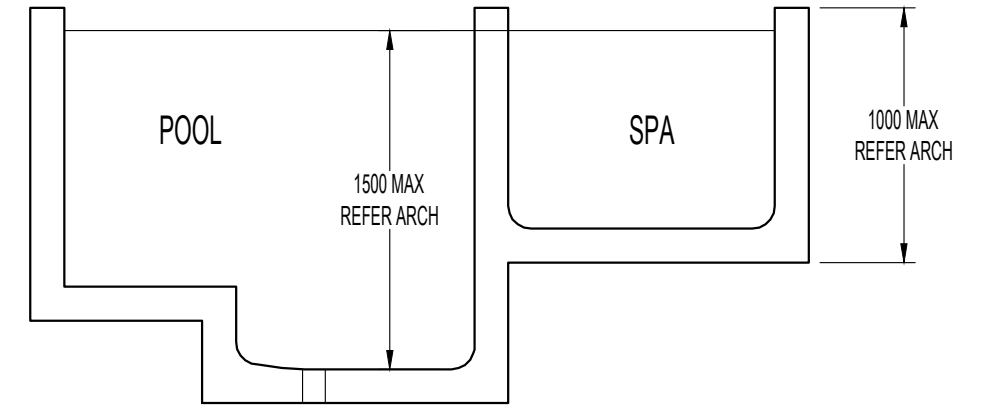
NOTE: APPROVED HYDROSTATIC PRESSURE RELIEF VALVE TO BE

EXACT DIMENSIONS AND RADII OF ALL CORNERS TO BE CONFIRMED ON SITE



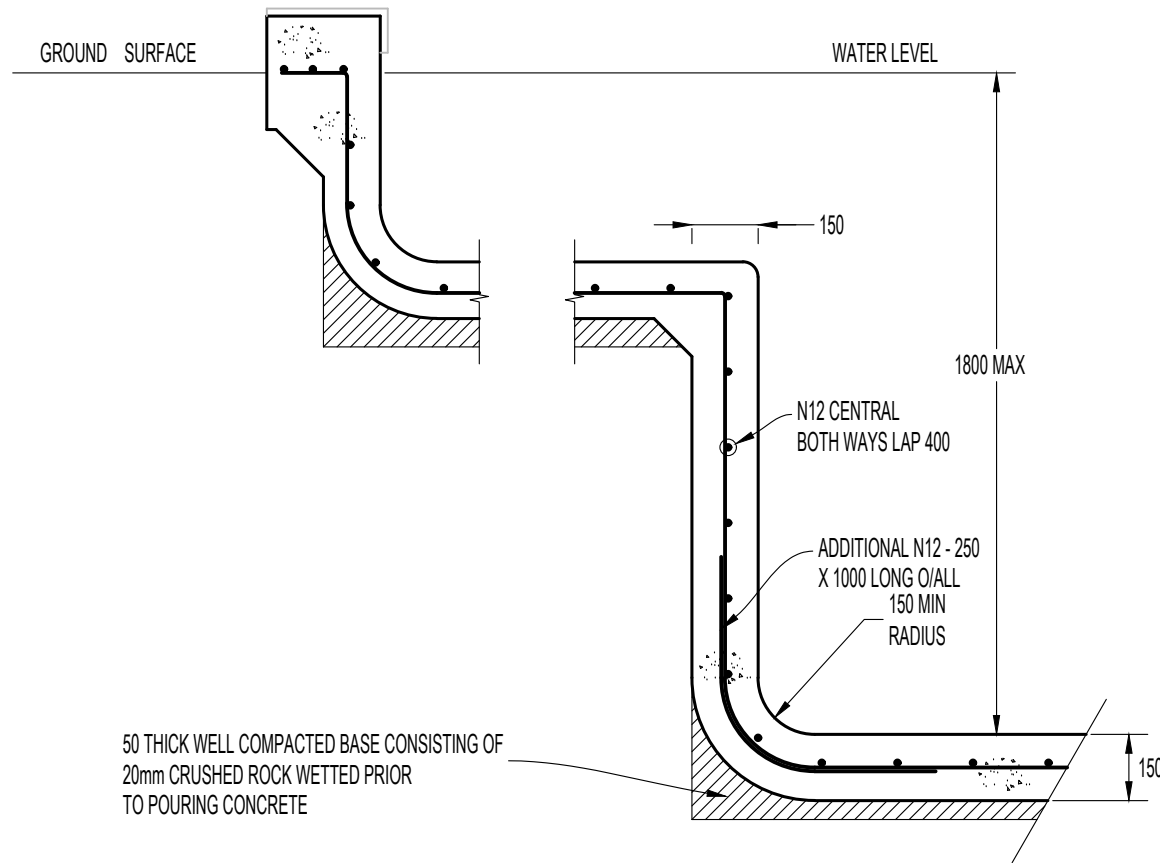
POOL PLAN

SCALE 1:100



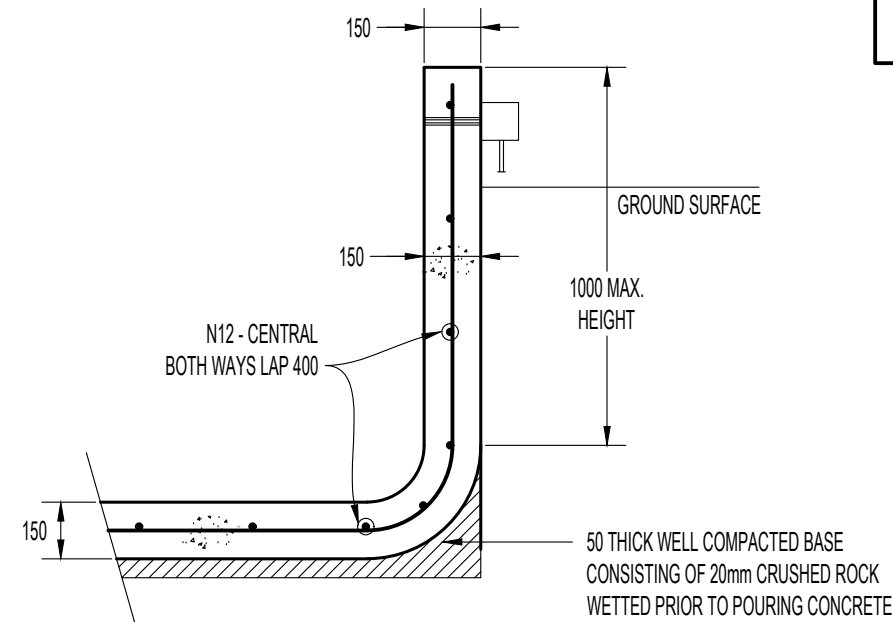
TYPICAL POOL SECTION

N.T.S



TYPICAL SECTION THROUGH STEP

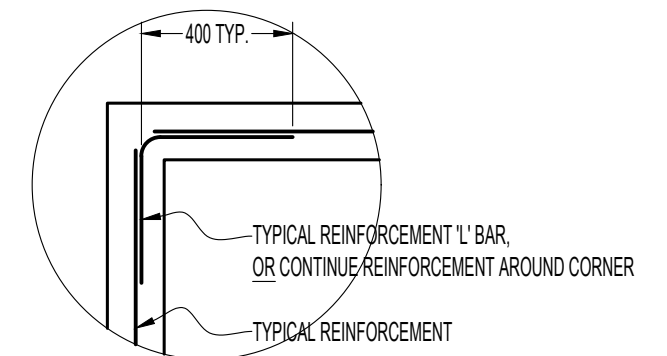
SCALE 1:20



TYPICAL SECTION THROUGH WALL

SCALE 1:20

REINFORCEMENT SCHEDULE	
POOL WALLS UP TO 1.5m HEIGHT	150mm MIN. THICK WALLS N/S12 BARS CENTRAL @ 200c-c VERTICAL N/S12 BARS CENTRAL @ 200c-c HORIZONTAL
POOL WALLS UP TO 1.0m HEIGHT	150mm MIN. THICK WALLS N/S12 BARS CENTRAL @ 300c-c VERTICAL N/S12 BARS CENTRAL @ 300c-c HORIZONTAL



SQUARE CORNER REO LAP

SCALE 1:20

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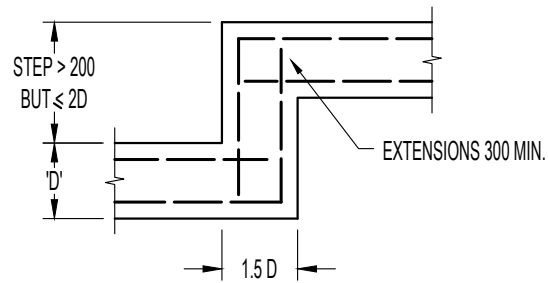
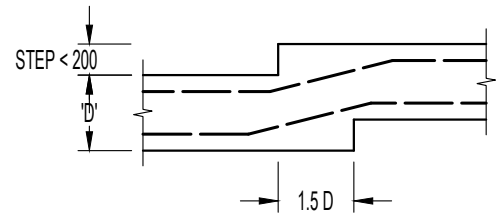
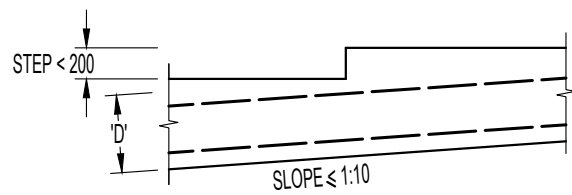
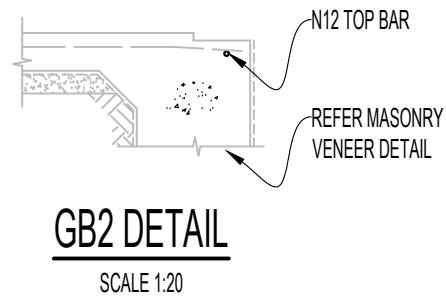
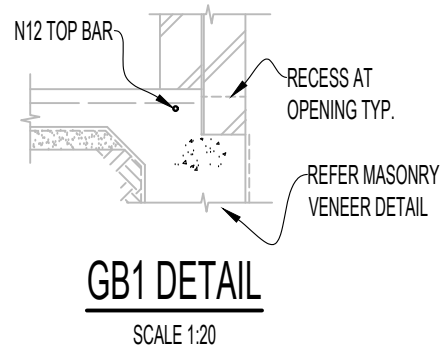
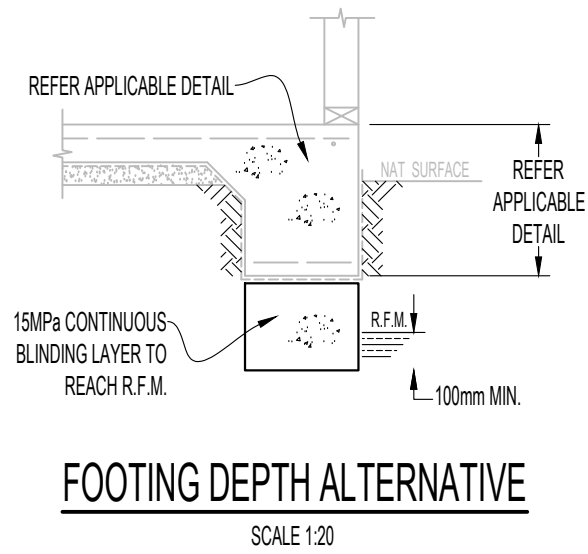


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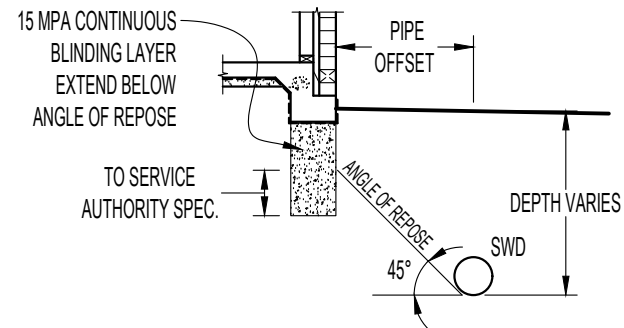
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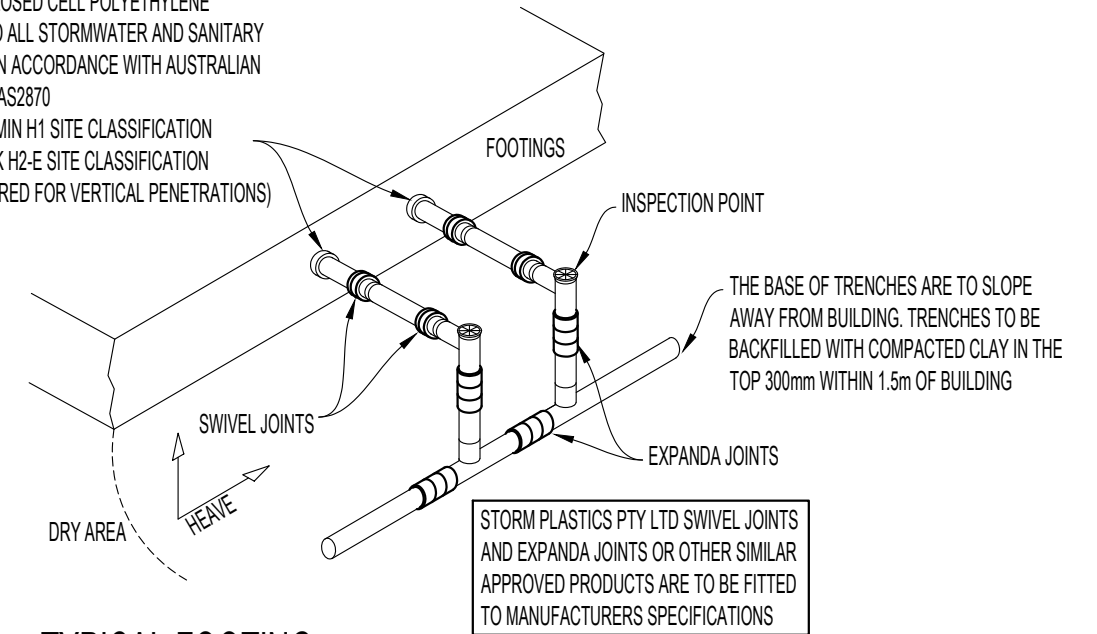
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STRIP FOOTING STEP DETAILS
NOT TO SCALE



PROVIDE CLOSED CELL POLYETHYLENE LAGGING TO ALL STORMWATER AND SANITARY PLUMBING IN ACCORDANCE WITH AUSTRALIAN STANDARD AS2870
20mm THK. MIN H1 SITE CLASSIFICATION or 40mm THK H2-E SITE CLASSIFICATION (NOT REQUIRED FOR VERTICAL PENETRATIONS)



NOTE:

- PENETRATIONS ARE TO BE AVOIDED WHERE PRACTICABLE, BUT WHERE NECESSARY SHALL BE DETAILED AS SHOWN TO ALLOW FOR MOVEMENT IN RELATION TO THE SITE CLASSIFICATION
- HOT & COLD WATER PIPES ARE NOT TO BE INSTALLED UNDER A SLAB UNLESS THEY ARE INSTALLED WITHIN A CONDUIT AND COMPLY WITH AS/NZS 3500.1 & AS/NZS 3500.4
- WHERE PIPES PASS UNDER FOOTING SYSTEM, TRENCH SHALL BE BACK FILLED FULL DEPTH WITH CLAY OR CONCRETE TO ACT AS A BARRIER TO INGRESS OF WATER BENEATH THE FOOTING SYSTEM
- SURFACE DRAINAGE SHOULD BE CONSIDERED THROUGHOUT THE CONSTRUCTION OF THE BUILDING
- SUB-SURFACE DRAINAGE FOR GROUNDWATER REMOVAL NOT TO BE USED WITHIN 1.5m OF THE BUILDING UNLESS DESIGNED IN ACCORDANCE WITH ENGINEERING PRINCIPALS

REV	DESCRIPTION	BY	DATE	Design:	Project:	Job No:
-	-	-	-	Drawn:	PROPOSED RESIDENCE - UNIT 2	S6
-	-	-	-	Checked:		
-	-	-	-	Date: MAY 2019		
				Client:	Revision No:	-



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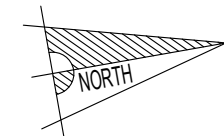
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GENERAL NOTES - STRUCTURAL LAYOUTS

- ALL SIZES NOMINATED ARE A STRUCTURAL MINIMUM AND MAY BE INCREASED AS REQUIRED FOR UNIFORMITY, EASE OF BUILDING OR AESTHETICS.
- ALL TIMBER TO TIMBER CONNECTIONS TO BE PRYDA FRAMING BRACKETS OR EQUIVALENT TO MATCH BEAM DEPTHS/WIDTHS U.N.O
- ALL MULTIPLE MEMBERS TO BE NAIL/SCREW LAMINATED IN ACCORDANCE WITH AS1684 - 2006 RESIDENTIAL FRAMED TIMBER CONSTRUCTION.
- ALL TIMBER FRAMING AND CONNECTIONS NOT INCLUDED IN THE DETAILS PROVIDED ARE ASSUMED WITHIN THE CAPABILITY AND RESPONSIBILITY OF THE BUILDER TO ADHERE TO RELEVANT BUILDING STANDARDS. IF FURTHER INFORMATION IS REQUIRED CONTACT THE ENGINEER.
- PREFABRICATED TIMBER ROOF TRUSSES TO BE DESIGNED BY OTHERS. REFER TO TRUSS MANUFACTURER'S DOCUMENTATION (NOT SIGHTED) LOCATION AND LOADING OF GIRDER TRUSSES ASSUMED
- ALL BEAMS, LINTELS/ROOF MEMBERS TO HAVE 2/90 x 45 (MGP10) DOUBLE STUD TYPICAL (U.N.O.)
- ALL EXTERNAL STEEL LINTELS ARE TO BE COATED WITH A RUST INHIBITIVE ALKYD OR EQUIV.
- STEEL LINTELS SUPPORTING BRICKWORK TO HAVE MIN 150mm END BEARING TO EACH END.
- STEEL MEMBERS TO BE GRADE 300+ UNLESS OTHERWISE NOTED.
- BRACING NOMINATED ON THESE PLANS IS A MINIMUM. ALL CORNERS SHALL BE NOMINALLY BRACED WHERE POSSIBLE AND ADDITIONAL STRAP BRACE BY BUILDER AS REQUIRED.

WIND TERRAIN CATEGORY = N1 †

† - ALL ROOF FRAMING AND TIE DOWNS TO BE IN ACCORDANCE WITH AS1684 AND AS1720 WHERE APPLICABLE FOR CATEGORY NOMINATED ABOVE.

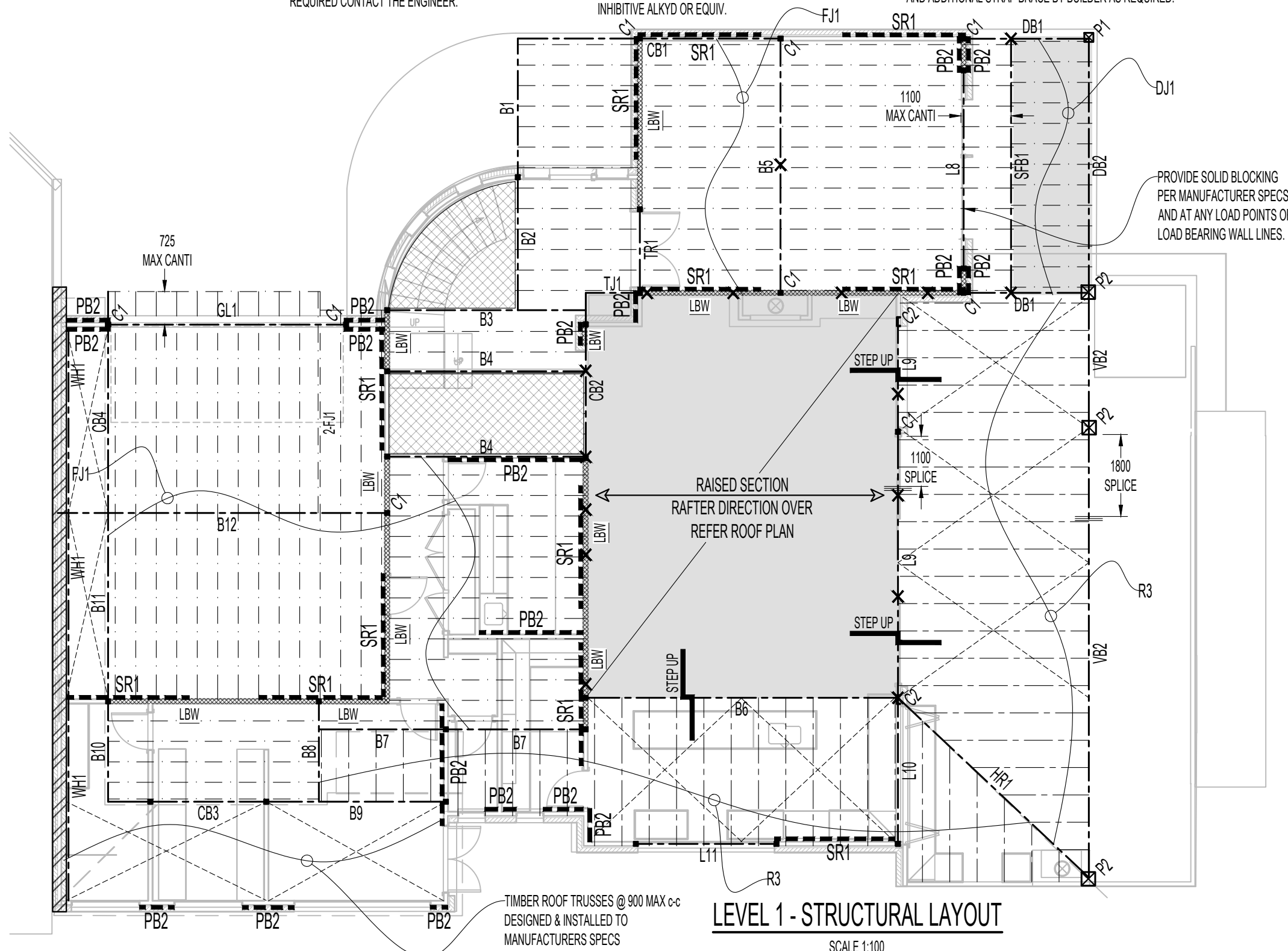


MEMBER SCHEDULE

MARK	DESCRIPTION	COMMENT
L8	2 / 360 x 45 hySPAN LVL	
L9	200 PFC	CONTINUOUS OR SPLICE
L10	2 / 240 x 45 hySPAN LVL	
L11	170 x 45 hySPAN LVL OR 190 x 45 MGP10	
GL1	250 PFC w / 200 x 10 FLAT BAR	BRICK LINTEL
B1	2 / 300 x 45 hySPAN LVL	
B2	2 / 300 x 45 hySPAN LVL	
B3	2 / 360 x 45 hySPAN LVL	
B4	300 x 63 hySPAN LVL	
B5	310UB 46.2	
B6	200 PFC	
B7	2 / 300 x 45 hySPAN LVL	
B8	2 / 300 x 45 hySPAN LVL	
B9	2 / 300 x 45 hySPAN LVL	
B10	2 / 360 x 45 hySPAN LVL	
B11	2 / 360 x 45 hySPAN LVL	
B12	360UB 50.7	
CB1	300 PFC	
CB2	2 / 300 x 45 hySPAN LVL	
CB3	2 / 360 x 45 hySPAN LVL	
CB4	2 / 360 x 45 hySPAN LVL	
DB1	200 PFC	
DB2	200 PFC - (OR CONTINUE VB2)	
SFB1	360 x 45 hySPAN LVL FIXING PLATE	
VB1	140 x 45 MGP10 OR F7	H3 TREAT OR FULLY PROTECT
VB2	250 PFC	CONTINUOUS OR SPLICE
FJ1	HJ360 63 hyJOIST	4.8m MAX SPAN @ 450 c-c
DJ1	140 x 45 MGP10	1.8m MAX SPAN @ 450 c-c
TR1	240 x 45 hySPAN LVL (MIN.)	
TJ1	240 x 45 hySPAN LVL (MIN.)	
R3	190 x 45 MGP10 (MIN.)	4.2m MAX SPAN @ 600 c-c
HR1	150 PFC	
WH1	140 x 45 MGP10 (MIN.)	M10 MASONRY ANCHORS @ 600 c-c
P1	150 x 150 F7 (MIN.)	H3 TREAT OR NATURAL DURABLE
P2	200 x 200 F7 (MIN.)	H3 TREAT OR NATURAL DURABLE
C1	89 x 5 SHS	
C2	200 PFC	
SR1	STRAP BRACING	3.0kN/m CAPACITY - REFER DETAIL
PB1	PLYWOOD BRACING	3.4kN/m CAPACITY - REFER DETAIL
PB2	PLYWOOD BRACING	6.0kN/m CAPACITY - REFER DETAIL

BRICK LINTEL SCHEDULE

DESCRIPTION	COMMENT
85 x 8 FLAT GALINTEL	0 - 900 SPAN. (BRICK LOAD ONLY. MIN 3 COURSES)
100 x 100 GALINTEL	900 - 2100 SPAN (BRICK LOAD ONLY. MIN 3 COURSES)
150 x 100 GALINTEL	2100 - 3600 SPAN (BRICK LOAD ONLY. MIN 3 COURSES)



LEVEL 1 - STRUCTURAL LAYOUT

SCALE 1:100

REV	DESCRIPTION	BY	DATE

Design:	Project:	Job No:
Drawn:	PROPOSED RESIDENCE - UNIT 2	Drawing No: S7
Checked:	Client:	Revision No:
Date: MAY 2019		

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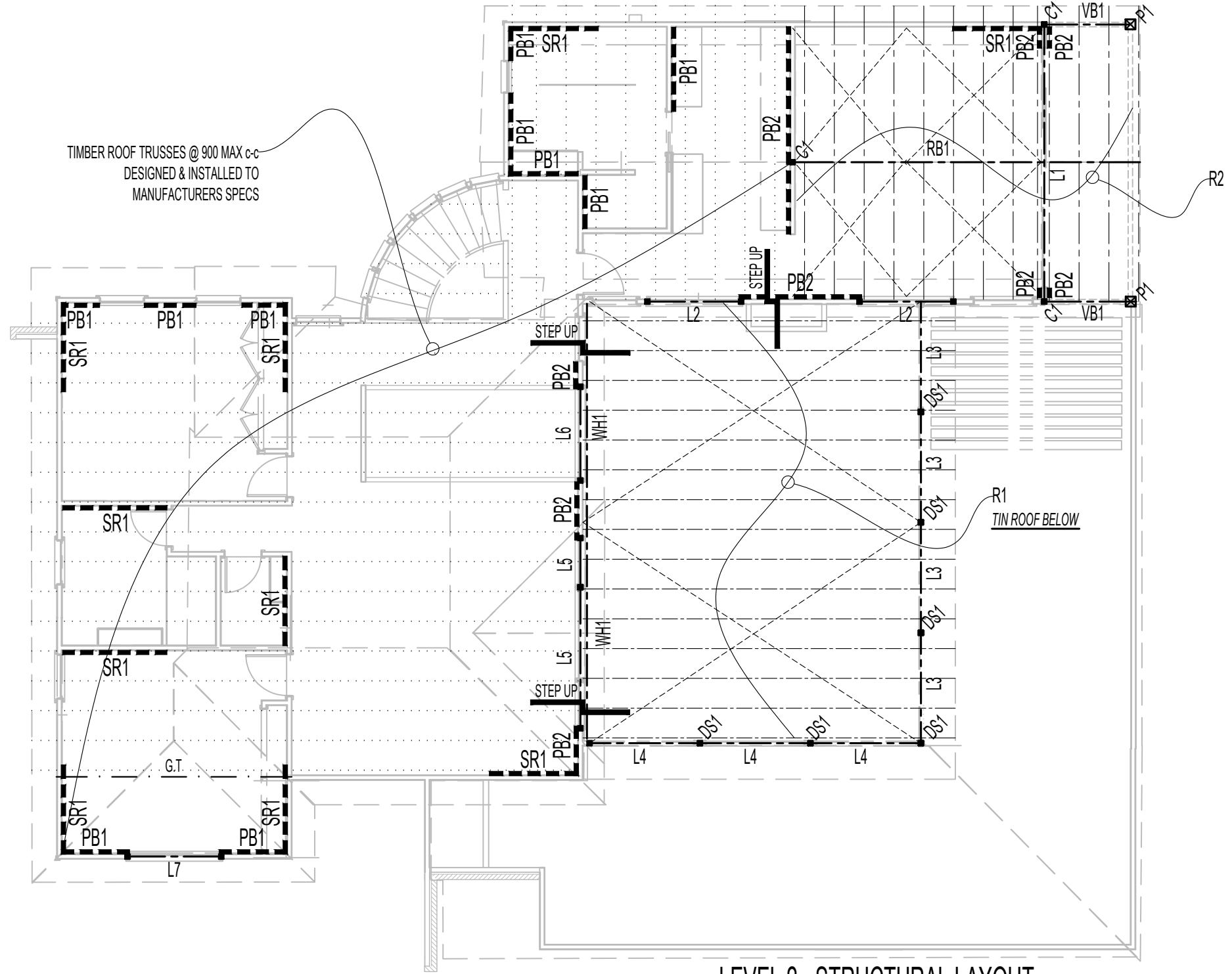
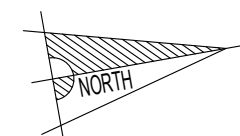
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WIND TERRAIN CATEGORY = N1 †
 † - ALL ROOF FRAMING AND TIE DOWNS TO BE IN ACCORDANCE WITH AS1684 AND AS1720 WHERE APPLICABLE FOR CATEGORY NOMINATED ABOVE.



MEMBER SCHEDULE		
MARK	DESCRIPTION	COMMENT
L1	230 PFC	
L2	130 x 45 hySPAN LVL OR 140 x 45 MGP10	
L3	2 / 140 x 45 MGP10	
L4	2 / 140 x 45 MGP10	
L5	240 x 45 hySPAN LVL	
L6	150 x 45 hySPAN LVL	
L7	130 x 45 hySPAN LVL OR 140 x 45 MGP10	
RB1	2 / 300 x 45 hySPAN LVL OR 200UB 22.3	
VB1	140 x 45 MGP10 (MIN.)	H3 TREAT OR FULLY PROTECT
R1	300 x 45 hySPAN LVL	6.8m MAX SPAN @ 600 c-c
	240 x 63 hySPAN LVL	6.8m MAX SPAN @ 300 c-c
R2	190 x 45 MGP10 (MIN.)	3.2m MAX SPAN @ 600 c-c
WH1	240 x 45 hySPAN LVL	2 / 14g BATTEN SCREW PER STUD
P1	150 x 150 F7 (MIN.)	H3 TREAT OR NATURAL DURABLE
DS1	2 / 90 x 45 hySPAN LVL	
SR1	STRAP BRACING	3.0kN/m CAPACITY - REFER DETAIL
PB1	PLYWOOD BRACING	3.4kN/m CAPACITY - REFER DETAIL
PB2	PLYWOOD BRACING	6.0kN/m CAPACITY - REFER DETAIL

LEGEND

- LBW = LOAD BEARING WALL BELOW
- LBW-O = LOAD BEARING WALL OVER
- SHOWS EXTENT OF DECK / OUTDOOR AREA
- WALL BRACING REFER SHEET S10 FOR DETAILS
- LOAD BEARING LOCATIONS
- PRYDA SPEEDBRACE (OR EQUIV) ROOF BRACING INSTALLED TO MANUF. SPECS. (TYP)
- ARTICULATION JOINT LOCATIONS REFER TN61 FOR DETAILS OF EXPANSION TIES, FILLER BLOCK & ELASTOMERIC SEALANT

LEVEL 2 - STRUCTURAL LAYOUT

SCALE 1:100

REV	DESCRIPTION	BY	DATE

Design: _____ Project: **PROPOSED RESIDENCE - UNIT 2** Job No: _____

Drawn: _____ Drawing No: **S8**

Checked: _____ Client: _____ Revision No: _____

Date: **MAY 2019**

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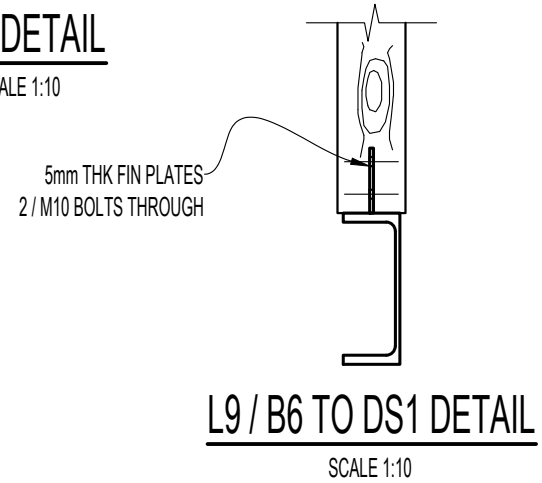
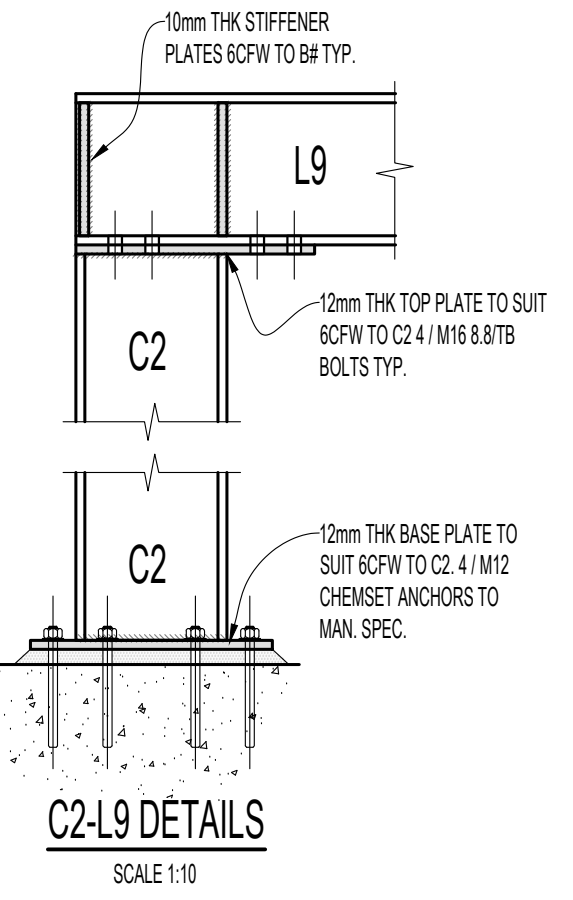
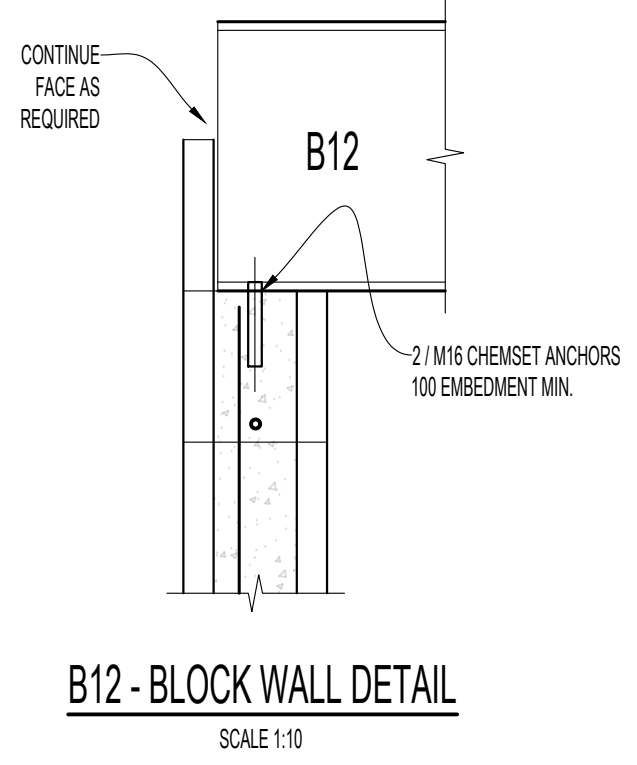
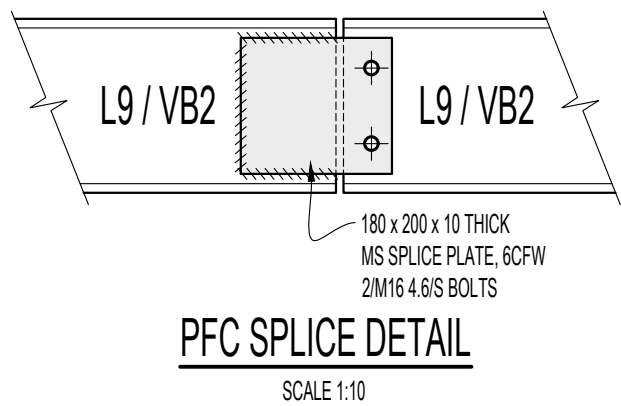
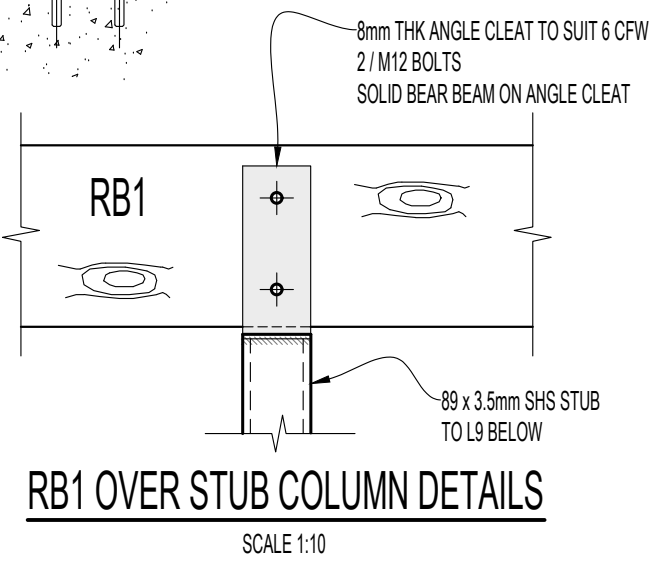
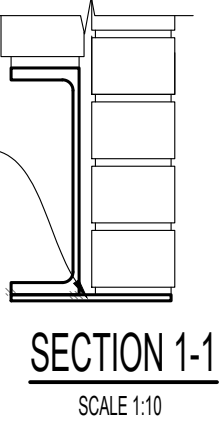
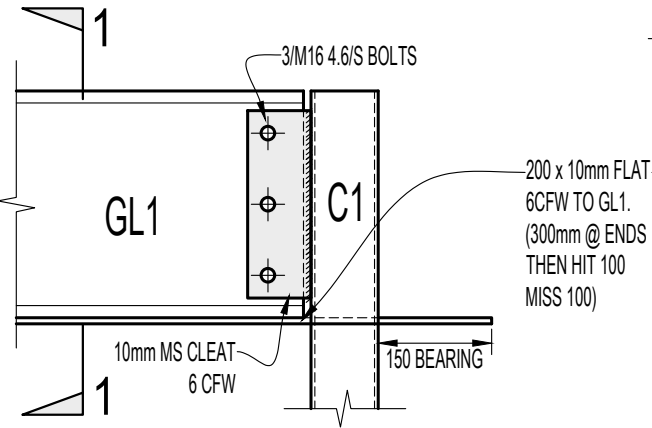
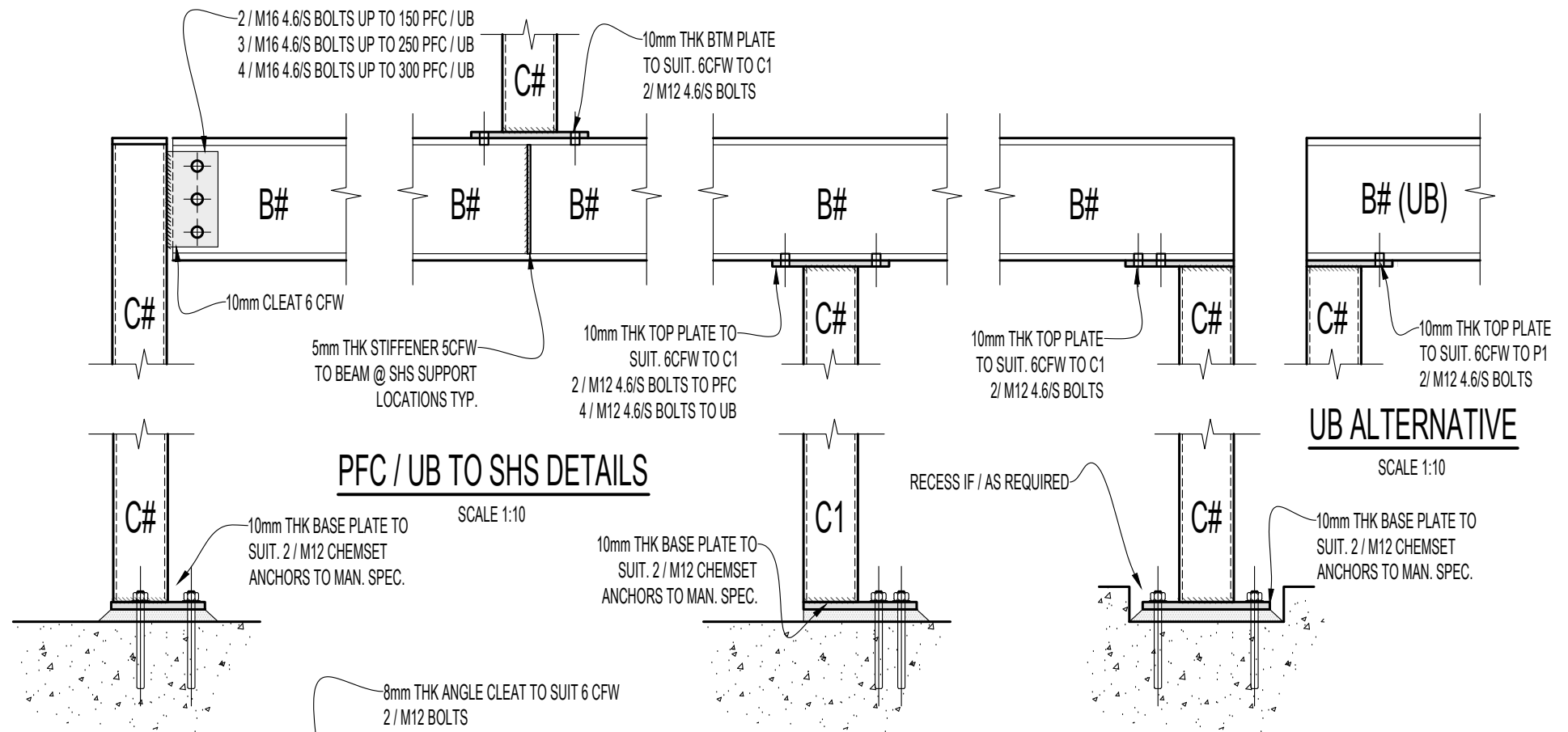
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NOTE:

- ALLOW 2.5 TIMES THE NOMINAL DIAMETER OF THE BOLT FOR BOLT SPACINGS
- BOLTS THROUGH TIMBER TO BE 5 x Ø FOR EDGE DISTANCE AND BOLT CLEARANCES TYPICAL UNLESS NOTED OTHERWISE

NOTE: STEELWORK FINISH
 ALL EXTERNAL OR OTHERWISE EXPOSED STEELWORK IS TO BE HOT DIPPED GALVANISED IN ACCORDANCE TO AS. 1650 - 1989
 FOR RHS & OTHER ENCLOSED MEMBERS ENSURE FINISH COATS INTERNAL SURFACES.
 OR ALTERNATIVELY :
 SANDBLASTED TO CLASS 2.5, COATED WITH APPROVED INORGANIC ZINC SILICATE AND PAINTED WITH AN APPROVED TOP COAT.

NOTE:
 ALL BOLT TYPES ARE TO BE 4.6/S UNLESS OTHERWISE NOTED ON DETAILS. DETAILS TAKE PRECEDENCE OVER ITEMS PROVIDED IN TABLE. FOR ITEMS NOT LISTED AND SPECIFIC MOMENT TYPE CONNECTIONS REFER TO SECTIONS/DETAILS PROVIDED.



REV	DESCRIPTION	BY	DATE

Design: **PROPOSED RESIDENCE - UNIT 2**
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 Checked:
 Date: MAY 2019

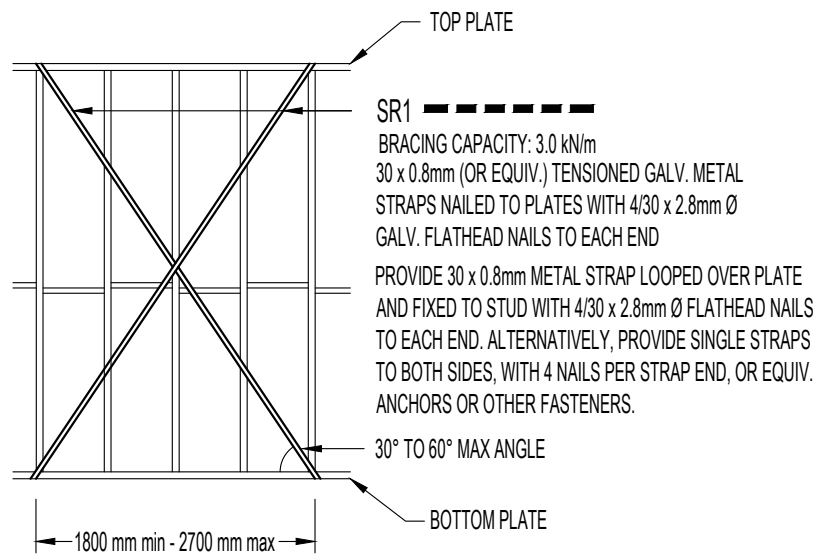
Project: **PROPOSED RESIDENCE - UNIT 2**
 Job No:
 Drawing No: **S9**
 Revision No:
 Client:
 Date: MAY 2019

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GENERAL NOTES - BRACING

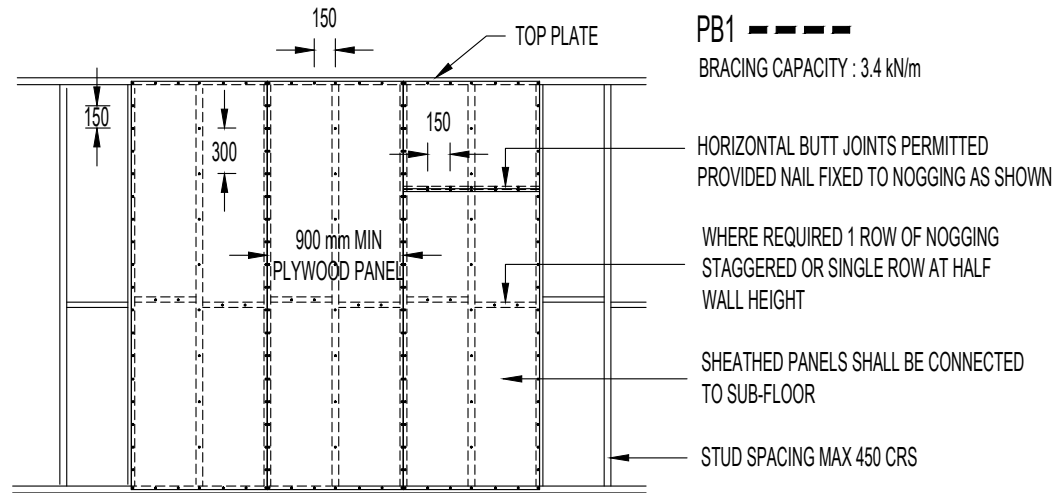
- STEEL COLUMNS WITHIN OR NEXT TO A PLY BRACE WALL ARE TO BE ENGAGED TO ADJACENT TIMBER STUDS WITH SELF-DRILLING SCREWS AT 150mm c-c VERTICAL
- IN MULTI-LEVEL CONSTRUCTION, 60% OF THE LOWER LEVELS BRACING SHALL BE INSTALLED PRIOR TO UPPER LEVEL CONSTRUCTION.
- BRACING NOMINATED ON THESE PLANS MAY BE SUBSTITUTED FOR EQUIVALENT BRACING TO MANUFACTURERS SPECIFICATIONS TO EQUAL OR GREATER CAPACITY TO R.B.S. SATISFACTION



SR1
 BRACING CAPACITY: 3.0 kN/m
 30 x 0.8mm (OR EQUIV.) TENSIONED GALV. METAL STRAPS NAILED TO PLATES WITH 4/30 x 2.8mm Ø GALV. FLATHEAD NAILS TO EACH END
 PROVIDE 30 x 0.8mm METAL STRAP LOOPED OVER PLATE AND FIXED TO STUD WITH 4/30 x 2.8mm Ø FLATHEAD NAILS TO EACH END. ALTERNATIVELY, PROVIDE SINGLE STRAPS TO BOTH SIDES, WITH 4 NAILS PER STRAP END, OR EQUIV. ANCHORS OR OTHER FASTENERS.

WALL BRACING DETAIL

TO BE BRACED IN ACCORDANCE WITH AS 1684 & BCA REQUIREMENTS

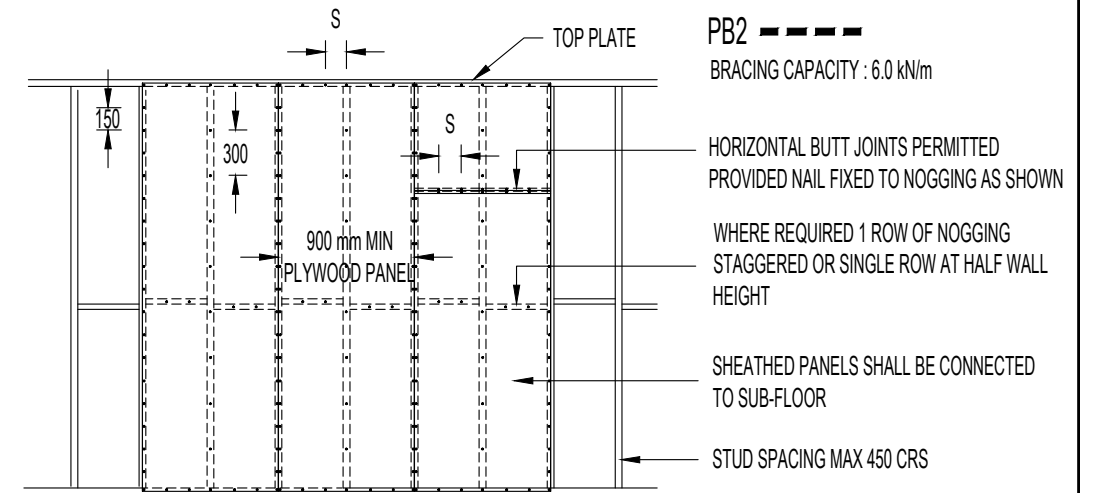


PB1
 BRACING CAPACITY : 3.4 kN/m
 HORIZONTAL BUTT JOINTS PERMITTED PROVIDED NAIL FIXED TO NOGGING AS SHOWN
 WHERE REQUIRED 1 ROW OF NOGGING STAGGERED OR SINGLE ROW AT HALF WALL HEIGHT
 SHEATHED PANELS SHALL BE CONNECTED TO SUB-FLOOR
 STUD SPACING MAX 450 CRS

CAPACITY	MIN. PLYWOOD THICKNESS (mm)		FASTENERS
	STRESS GRADE		
3.4 kN/m	1 ROW NOGGING		PLYWOOD SHALL BE NAILED TO TIMBER FRAME WITH 30 X 2.8Ø FLATHEAD NAILS OR EQUIV.
	F8	7	
	F11	6	
	F14	4	
	F27	4	

WALL BRACING DETAIL

TO BE BRACED IN ACCORDANCE WITH AS 1684 & BCA REQUIREMENTS

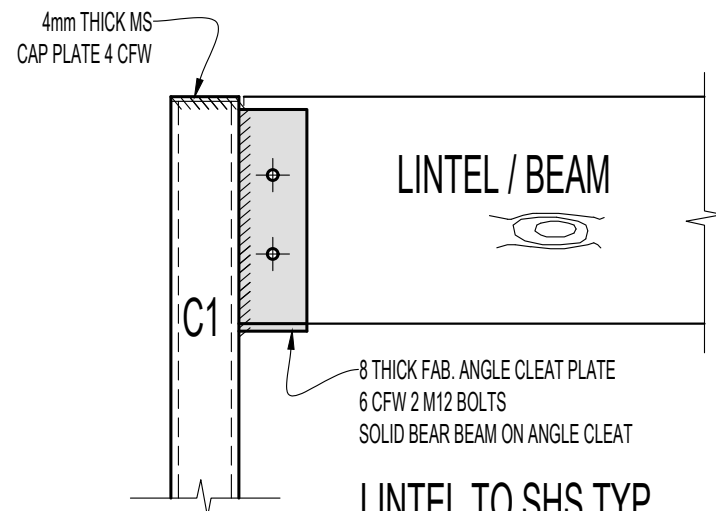


PB2
 BRACING CAPACITY : 6.0 kN/m
 HORIZONTAL BUTT JOINTS PERMITTED PROVIDED NAIL FIXED TO NOGGING AS SHOWN
 WHERE REQUIRED 1 ROW OF NOGGING STAGGERED OR SINGLE ROW AT HALF WALL HEIGHT
 SHEATHED PANELS SHALL BE CONNECTED TO SUB-FLOOR
 STUD SPACING MAX 450 CRS

CAPACITY	MIN. PLYWOOD THICKNESS (mm)		FASTENERS
	STRESS GRADE		
6.0 kN/m	1 ROW NOGGING		PLYWOOD SHALL BE NAILED TO TIMBER FRAME WITH 30 X 2.8Ø FLATHEAD NAILS OR EQUIV. S = 50 mm
	F8	7	
	F11	6	
	F14	4	
	F27	4	

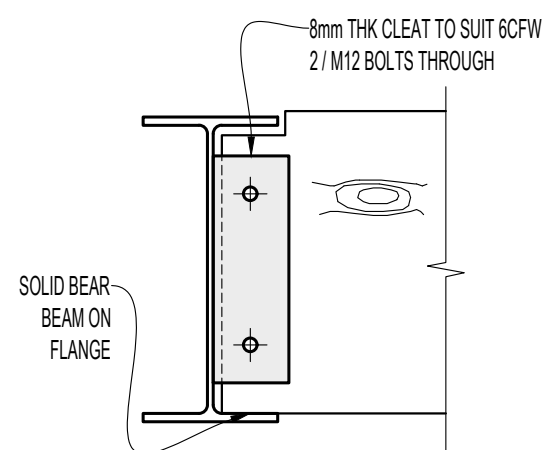
WALL BRACING DETAIL

TO BE BRACED IN ACCORDANCE WITH AS 1684 & BCA REQUIREMENTS



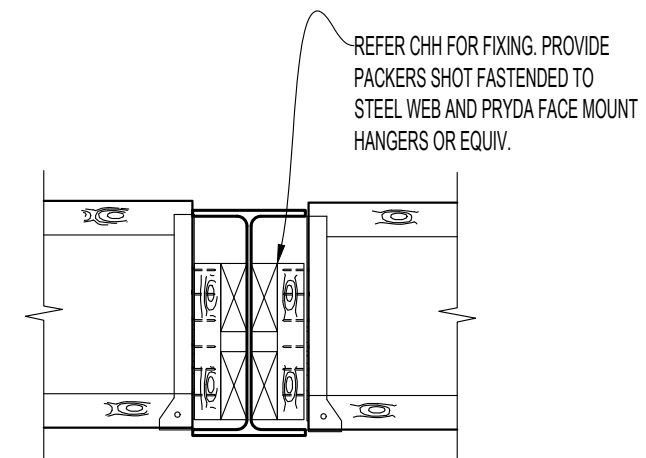
LINTEL TO SHS TYP

SCALE 1:10



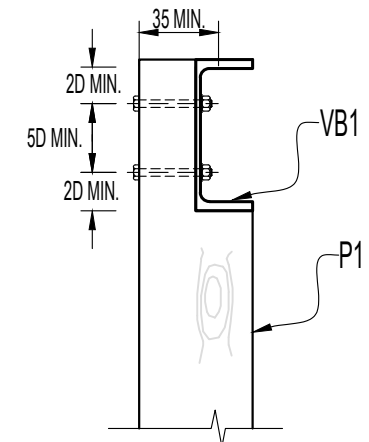
STEEL BEAM - TIMBER BEAM

SCALE 1:10



STEEL BEAM TO hyJOIST DETAIL

SCALE 1:10



VB2 TO P2 DETAIL

SCALE 1:10

REV	DESCRIPTION	BY	DATE

Design:	Project:	Job No:
Drawn:	PROPOSED RESIDENCE - UNIT 2	Drawing No:
Checked:	Client:	S10
Date: MAY 2019		Revision No:



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