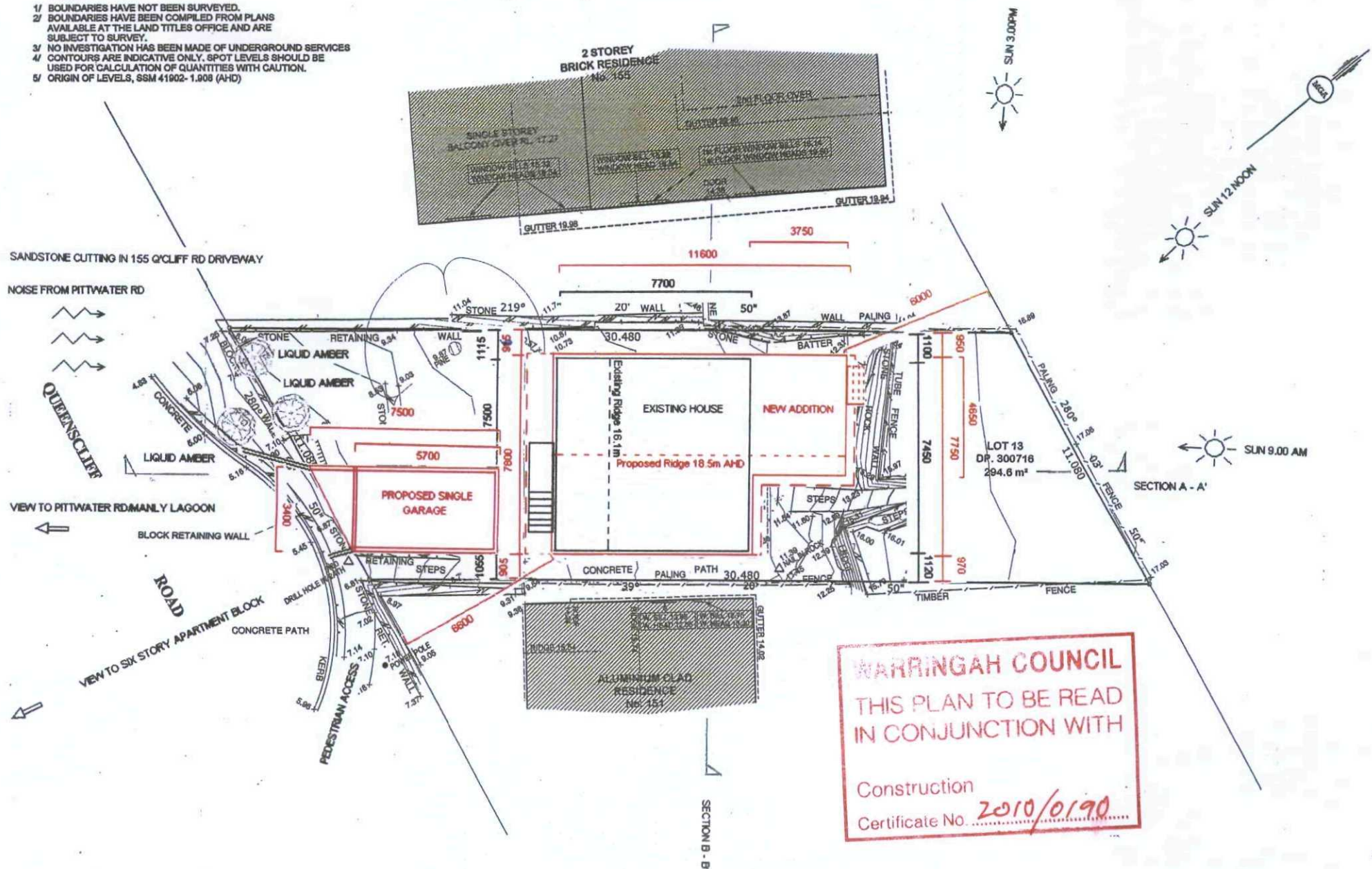
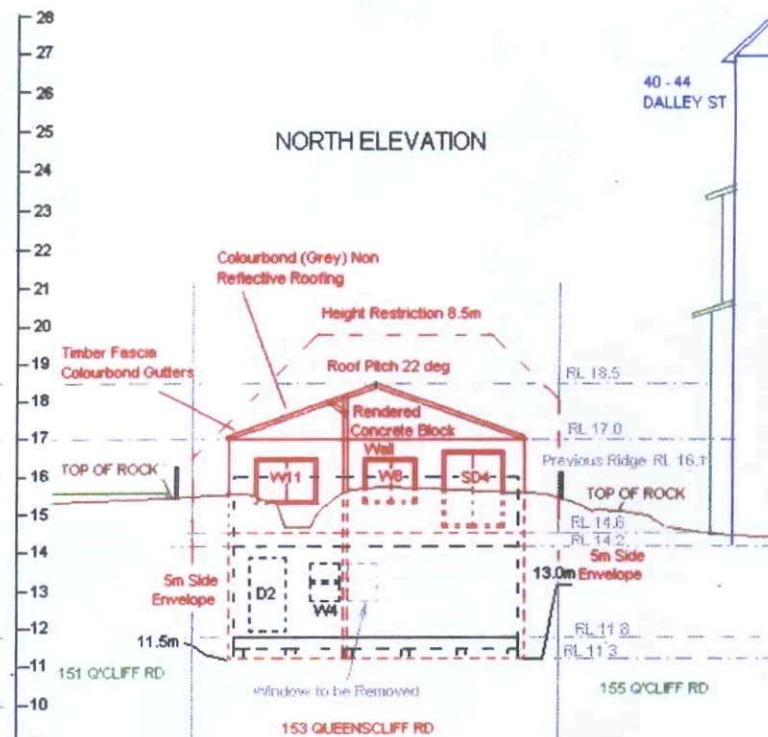
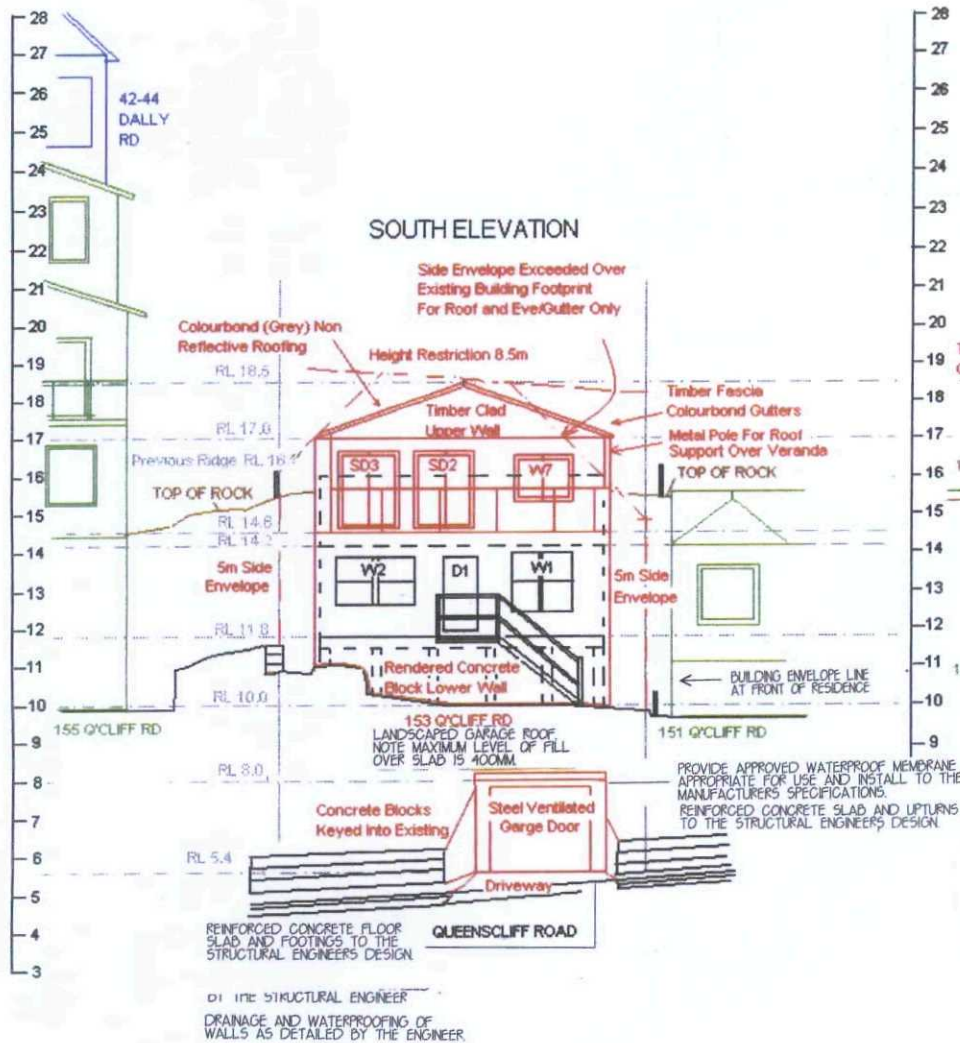


- 1/ BOUNDARIES HAVE NOT BEEN SURVEYED.
- 2/ BOUNDARIES HAVE BEEN COMPILED FROM PLANS AVAILABLE AT THE LAND TITLES OFFICE AND ARE SUBJECT TO SURVEY.
- 3/ NO INVESTIGATION HAS BEEN MADE OF UNDERGROUND SERVICES
- 4/ CONTOURS ARE INDICATIVE ONLY. SPOT LEVELS SHOULD BE USED FOR CALCULATION OF QUANTITIES WITH CAUTION.
- 5/ ORIGIN OF LEVELS, SSM 41902-1.908 (AHD)





**WARRINGAH COUNCIL**  
THIS PLAN TO BE READ  
IN CONJUNCTION WITH

Construction  
Certificate No 2010/0190

'COLOURBOND' CUSTOM ORB ROOF SHEETING, FIXINGS AND CAPPING INSTALLED TO THE MANUFACTURERS SPECIFICATIONS. FIX OVER CSF BRADFORD INSULATION BUILDING BLANKET

'COLOURBOND' GUTTERS AND DOWNPIPES CONNECTED TO THE EXISTING DISPOSAL SYSTEM AND CONNECT TO THE QUEENSLIFF ROAD GUTTER DISPOSAL. FIT LEAFGUARD OR WRITTEN APPROVED EQUIVALENT TO ALL GUTTERS.

AS ORIGINAL - DO NOT SCALE  
USE FITTED DIMENSIONS

**MD** MACEDO CONSULTING, PO Box 145  
Griffith NSW 2700

DRAWN: MCD  
VERSION: 2  
DATE: 20/01/10

LOCATION: 153 QUEENSLIFF RD, QUEENSLIFF  
SCALE 1:200

TITLE: **PLAN 4**  
**NORTH AND SOUTH ELEVATIONS**

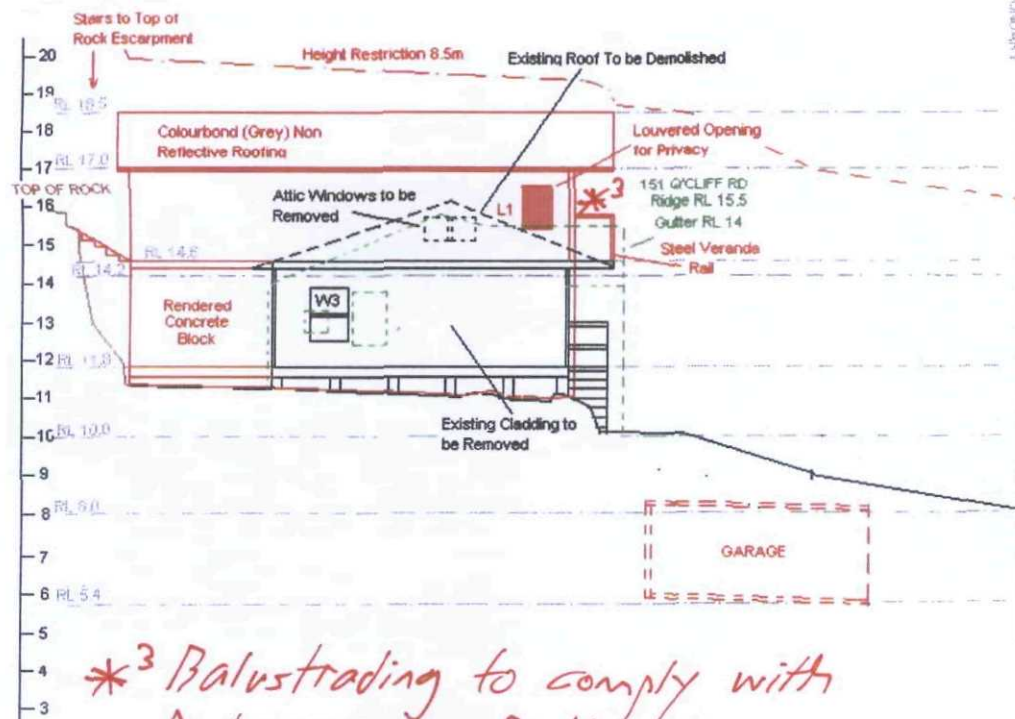


**WARRINGAH COUNCIL**  
THIS PLAN TO BE READ  
IN CONJUNCTION WITH

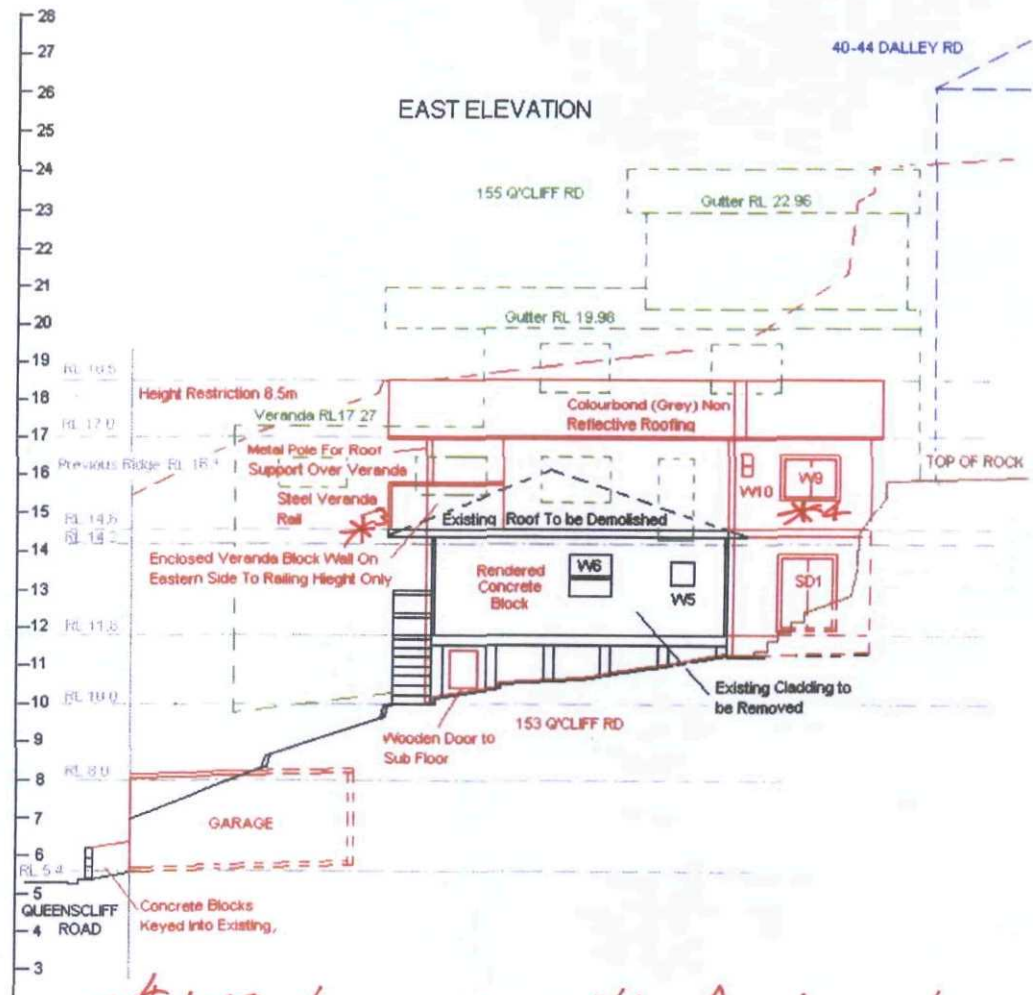
Construction

Certificate No 2010/0190

WEST ELEVATION



EAST ELEVATION



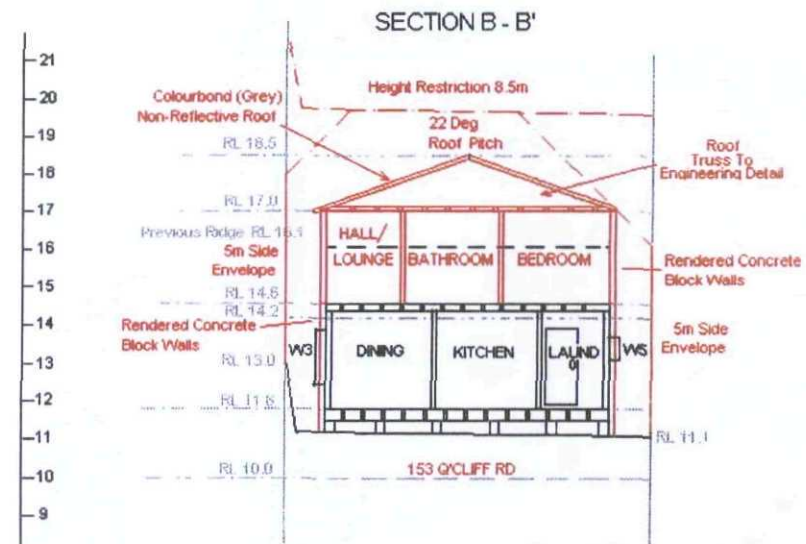
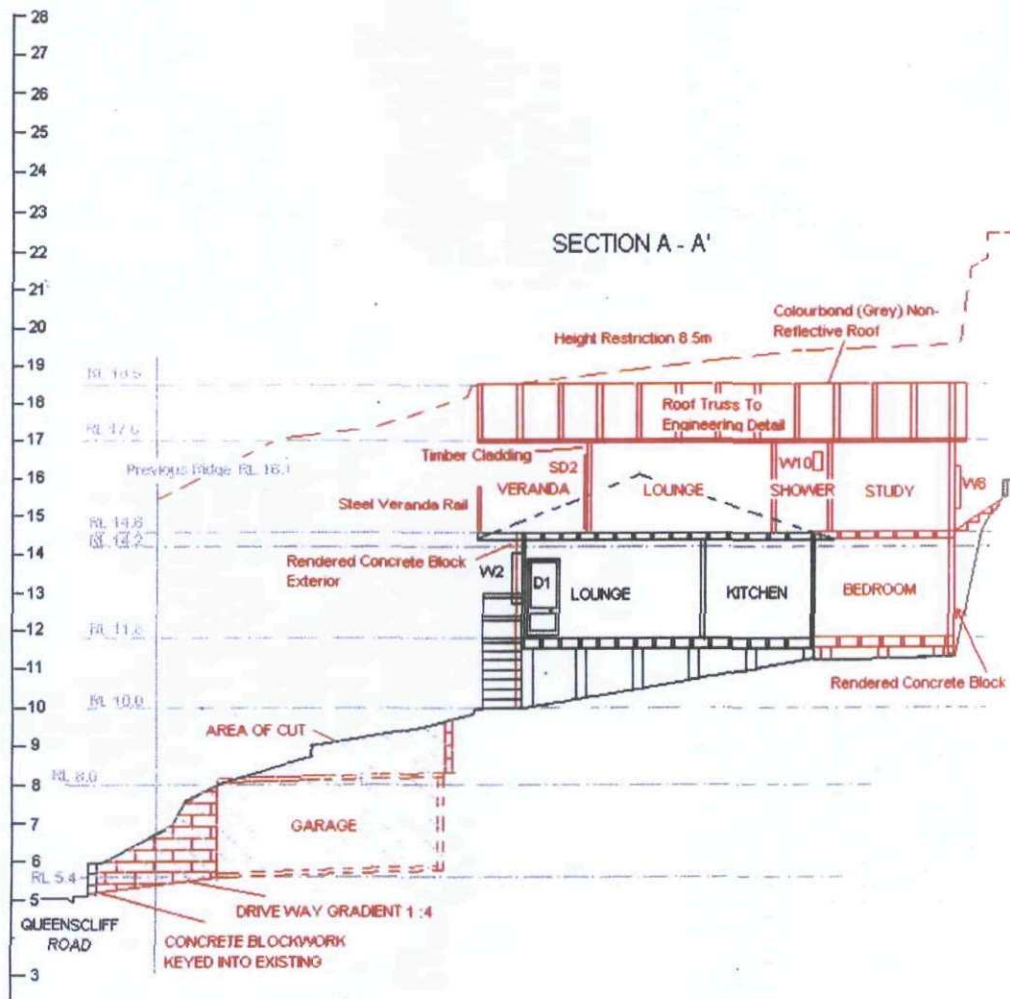
AS ORIGINAL - DO NOT SCALE  
USE WRITTEN DIMENSIONS

**MD** MACEDO CONSULTING  
PO Box 145  
Griffith NSW 2700

DRAWN: MCD  
VERSION: 2  
DATE: 20/01/10

LOCATION: 153 QUEENSCLIFF RD, QUEENSCLIFF  
SCALE 1:200

TITLE: PLAN 5  
EAST AND WEST ELEVATIONS



**WARRINGAH COUNCIL**  
THIS PLAN TO BE READ  
IN CONJUNCTION WITH

Construction

Certificate No 2010/0190

AT ORIGINAL - DO NOT SCALE  
USE FITTED DIMENSIONS

**MD** MACEDO CONSULTING, PO Box 145  
Indefatigable NSW 2070

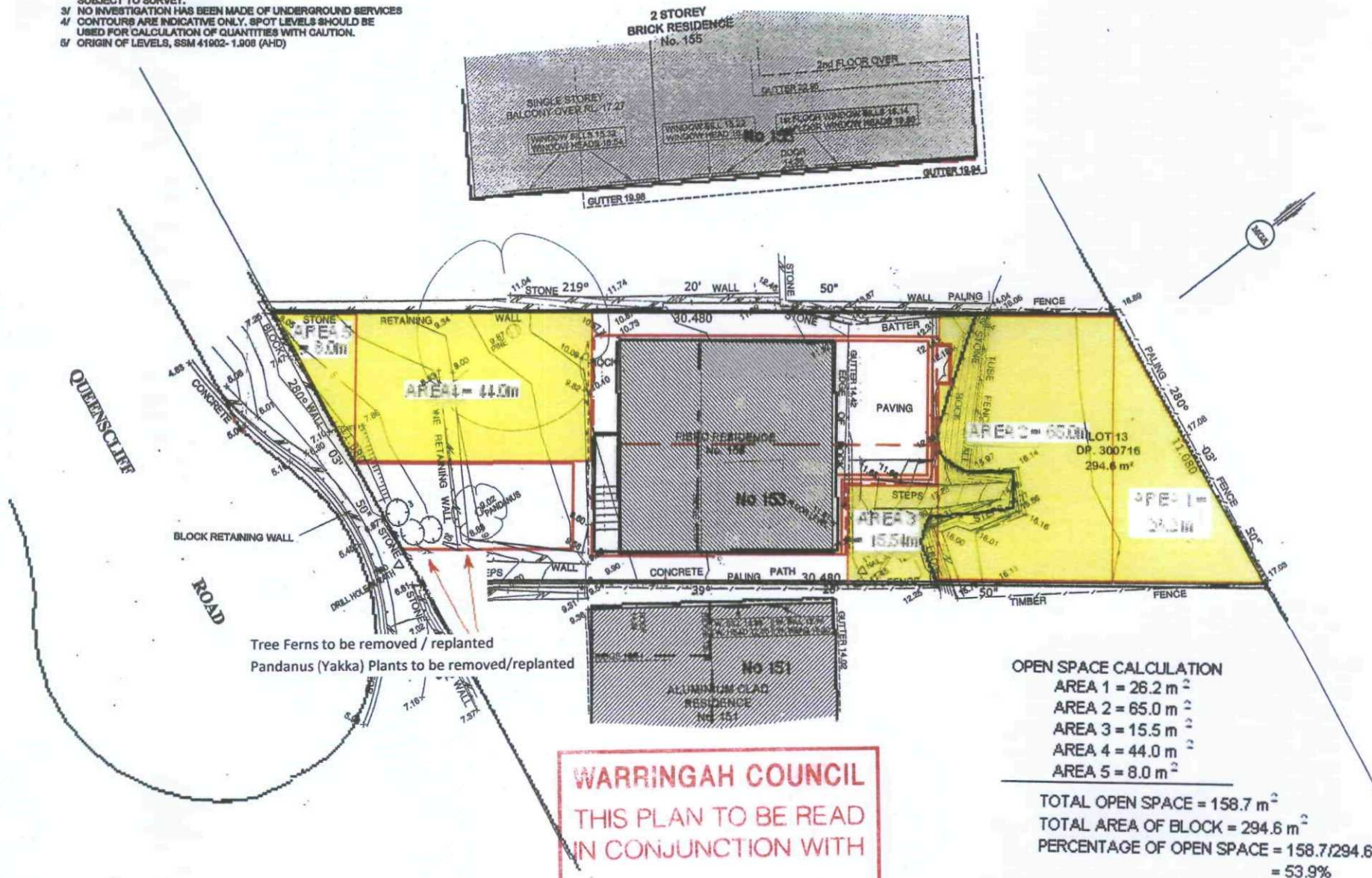
DRAWN: MCD  
VERSION: 2  
DATE: 20/01/10

LOCATION: 153 QUEENSCLIFF RD, QUEENSCLIFF  
SCALE 1:200

TITLE: PLAN 6  
SECTION A - A' AND SECTION B - B'



- NOTES
- 1/ BOUNDARIES HAVE NOT BEEN SURVEYED.
  - 2/ BOUNDARIES HAVE BEEN COMPILED FROM PLANS AVAILABLE AT THE LAND TITLES OFFICE AND ARE SUBJECT TO SURVEY.
  - 3/ NO INVESTIGATION HAS BEEN MADE OF UNDERGROUND SERVICES
  - 4/ CONTOURS ARE INDICATIVE ONLY. SPOT LEVELS SHOULD BE USED FOR CALCULATION OF QUANTITIES WITH CAUTION.
  - 5/ ORIGIN OF LEVELS, SSM 41902-1.908 (AHD)



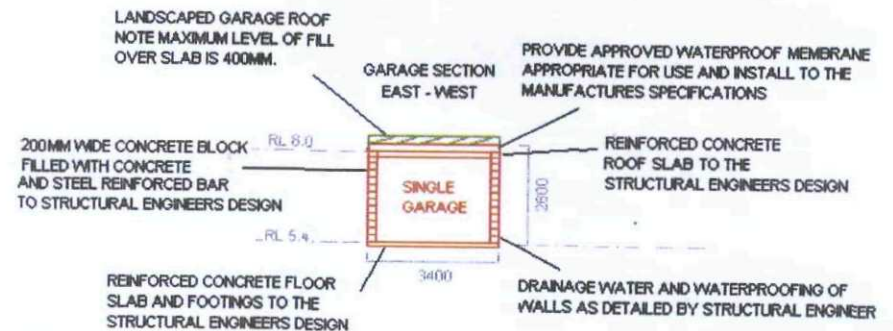
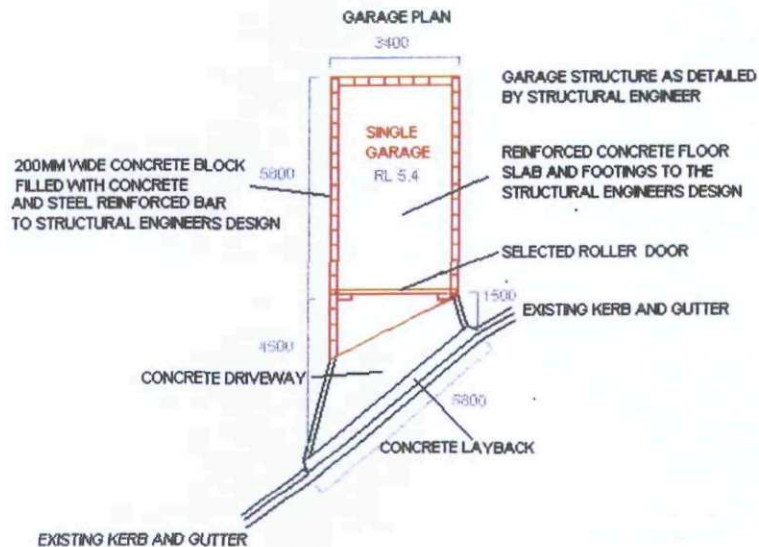
AS ORIGINAL - DO NOT SCALE  
USE FITTED DIMENSIONS

**M** MACEDO CONSULTING  
PO Box 145  
Gungahlin NSW 2070

DRAWN: MCD  
VERSION: 1  
DATE: 30/07/09

LOCATION: 153 QUEENSLIFF RD, QUEENSLIFF  
SCALE 1: 200

TITLE: PLAN 8  
LANDSCAPE OPEN SPACE CALCULATION



**WARRINGAH COUNCIL**

THIS PLAN TO BE READ  
IN CONJUNCTION WITH

Construction

Certificate No 2010/0190

AS ORIGINAL - DO NOT SCALE  
USE FITTED DIMENSIONS

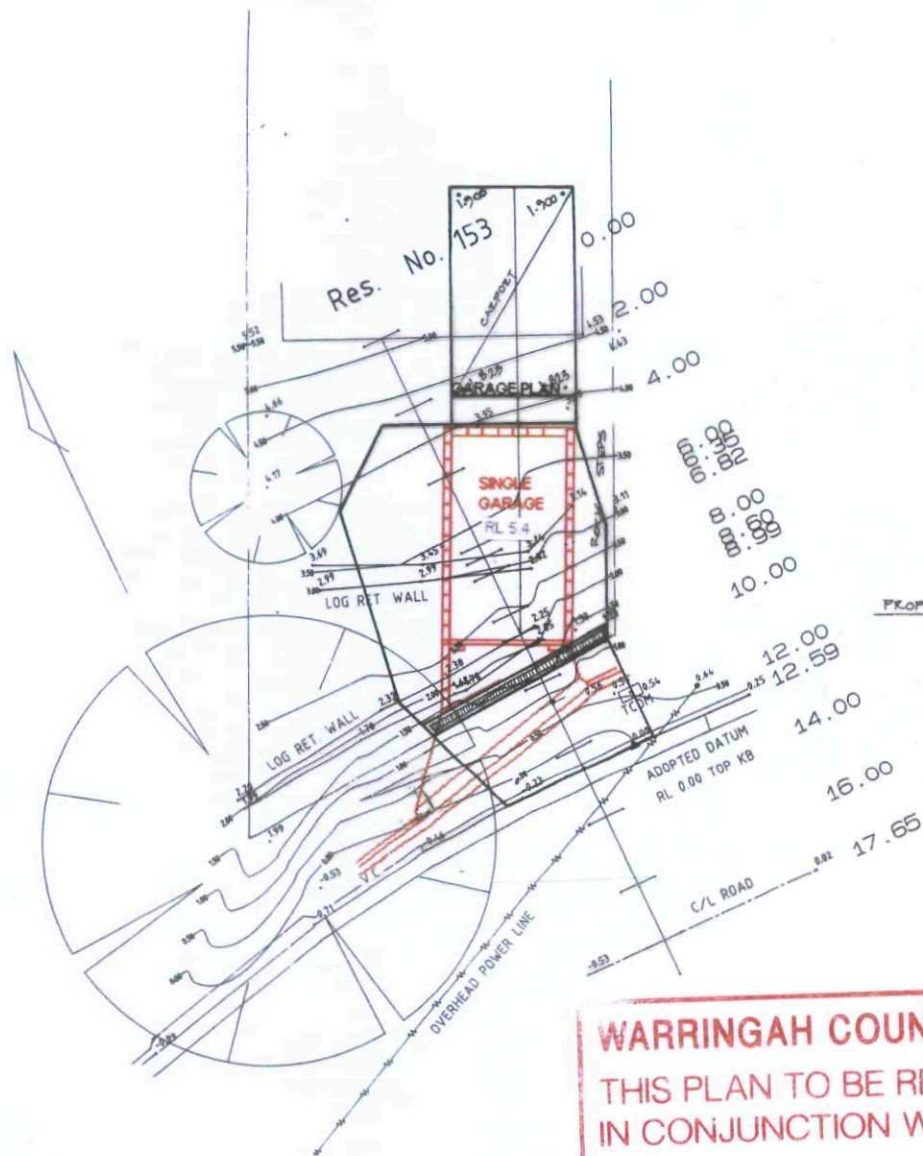
**MD** MACEDO CONSULTING  
PO Box 145  
Griffith NSW 2070

DRAWN: MCD  
VERSION: 2  
DATE: 20/01/10

LOCATION: 153 QUEENSCLIFF RD, QUEENSCLIFF  
SCALE 1:200

TITLE: PLAN 9  
GARAGE PLAN AND SECTION

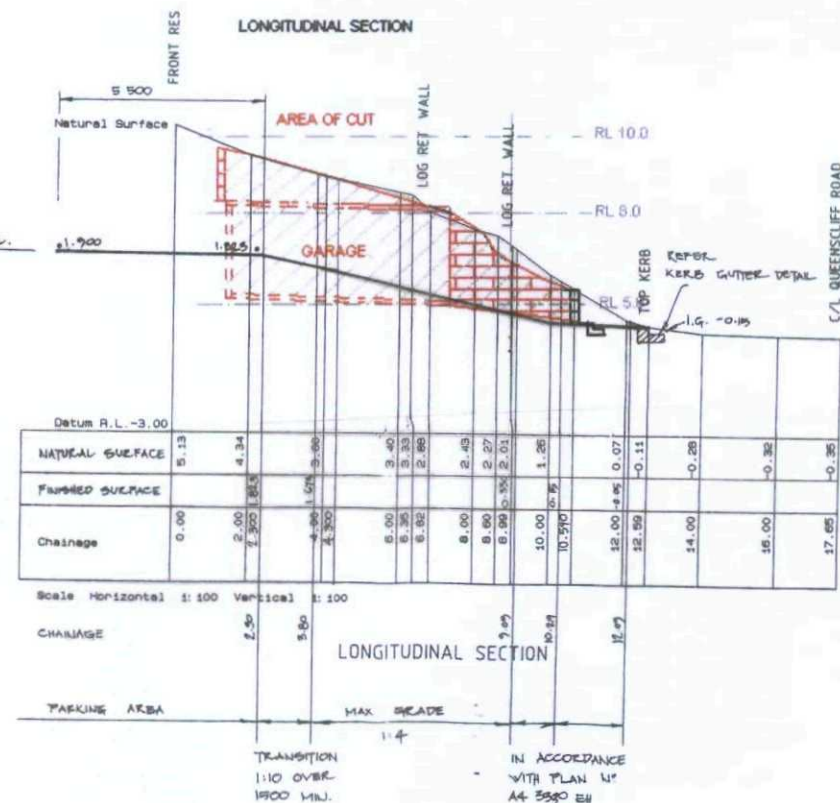




**WARRINGAH COUNCIL**  
THIS PLAN TO BE READ  
IN CONJUNCTION WITH

Construction

Certificate No. 2010/0190



1996 Approved Excavation Plans (Black)

2009 Proposed Excavation Plans (Red)

A4 ORIGINAL - DO NOT SCALE  
USE FITTED DIMENSIONS

**M** MACEDO CONSULTING  
PO Box 145  
Gundah NSW 2070

DRAWN: MCD  
VERSION: 2  
DATE: 20/01/10

LOCATION: 153 QUEENSLIFF RD, QUEENSLIFF  
SCALE 1:200

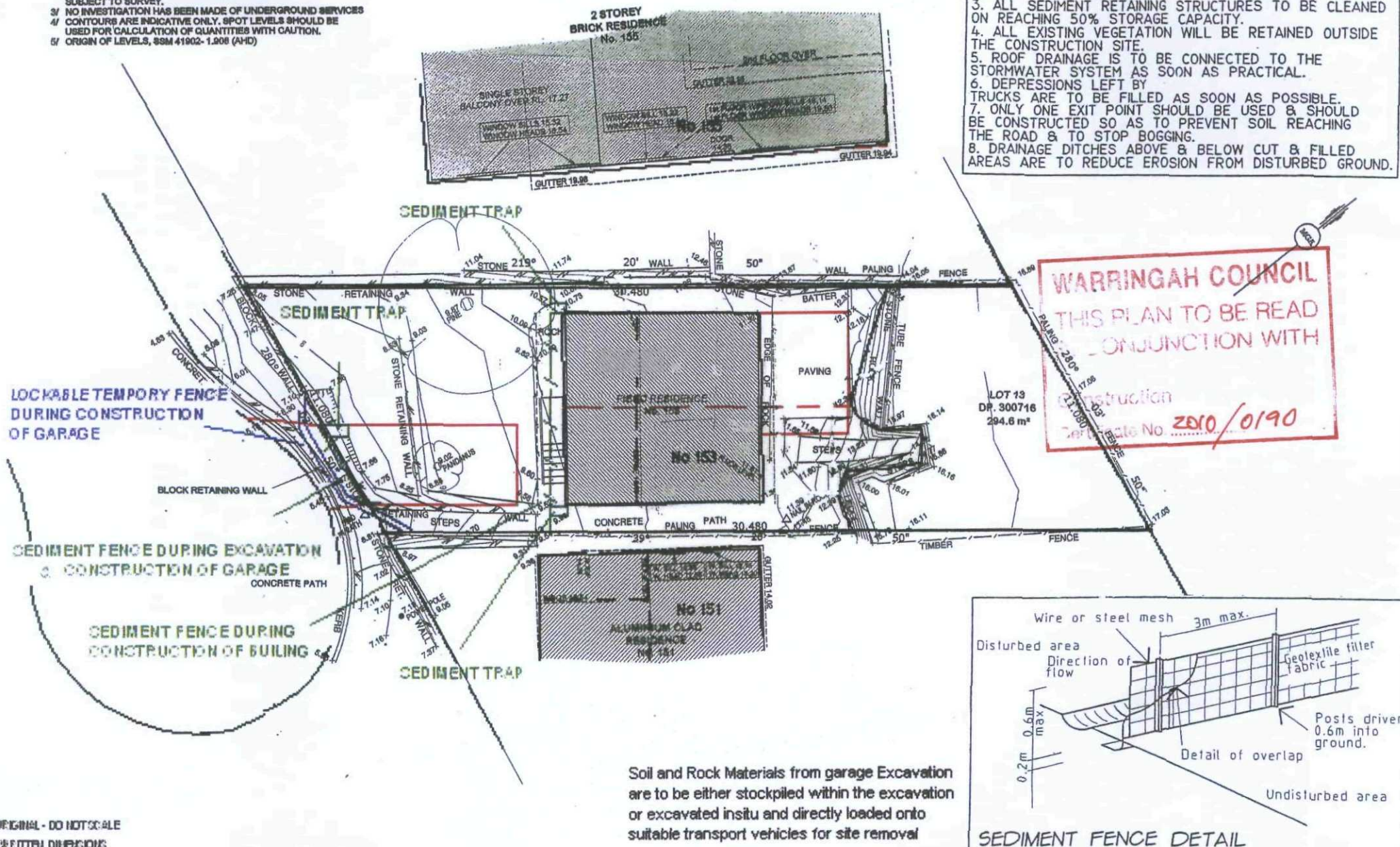
TITLE: PLAN 10  
DRIVEWAY AND GARAGE EXCAVATION PLAN



1/ BOUNDARIES HAVE NOT BEEN SURVEYED.  
2/ BOUNDARIES HAVE BEEN COMPILED FROM PLANS  
AVAILABLE AT THE LAND TITLES OFFICE AND ARE  
SUBJECT TO SURVEY.  
3/ NO INVESTIGATION HAS BEEN MADE OF UNDERGROUND SERVICES  
4/ CONTOURS ARE INDICATIVE ONLY. SPOT LEVELS SHOULD BE  
USED FOR CALCULATION OF QUANTITIES WITH CAUTION.  
5/ ORIGIN OF LEVELS, SSM 41902-1.208 (AHD)

SEDIMENT NOTE:

1. NO STOCKPILING OF MATERIALS IS PERMITTED ON THE VERGE BETWEEN KERB & PROPERTY BOUNDARY.
2. NO VEHICLE CROSSING OR STOCKPILING OF MATERIAL ON VEGETATION BUFFER.
3. ALL SEDIMENT RETAINING STRUCTURES TO BE CLEANED ON REACHING 50% STORAGE CAPACITY.
4. ALL EXISTING VEGETATION WILL BE RETAINED OUTSIDE THE CONSTRUCTION SITE.
5. ROOF DRAINAGE IS TO BE CONNECTED TO THE STORMWATER SYSTEM AS SOON AS PRACTICAL.
6. DEPRESSIONS LEFT BY TRUCKS ARE TO BE FILLED AS SOON AS POSSIBLE.
7. ONLY ONE EXIT POINT SHOULD BE USED & SHOULD BE CONSTRUCTED SO AS TO PREVENT SOIL REACHING THE ROAD & TO STOP BOGGING.
8. DRAINAGE DITCHES ABOVE & BELOW CUT & FILLED AREAS ARE TO REDUCE EROSION FROM DISTURBED GROUND.



**MD** MACEDO CONSULTING PO Box 145  
Gridfield NSW 2070

DRAWN: MCD
VERSION: 1
DATE: 30/07/09

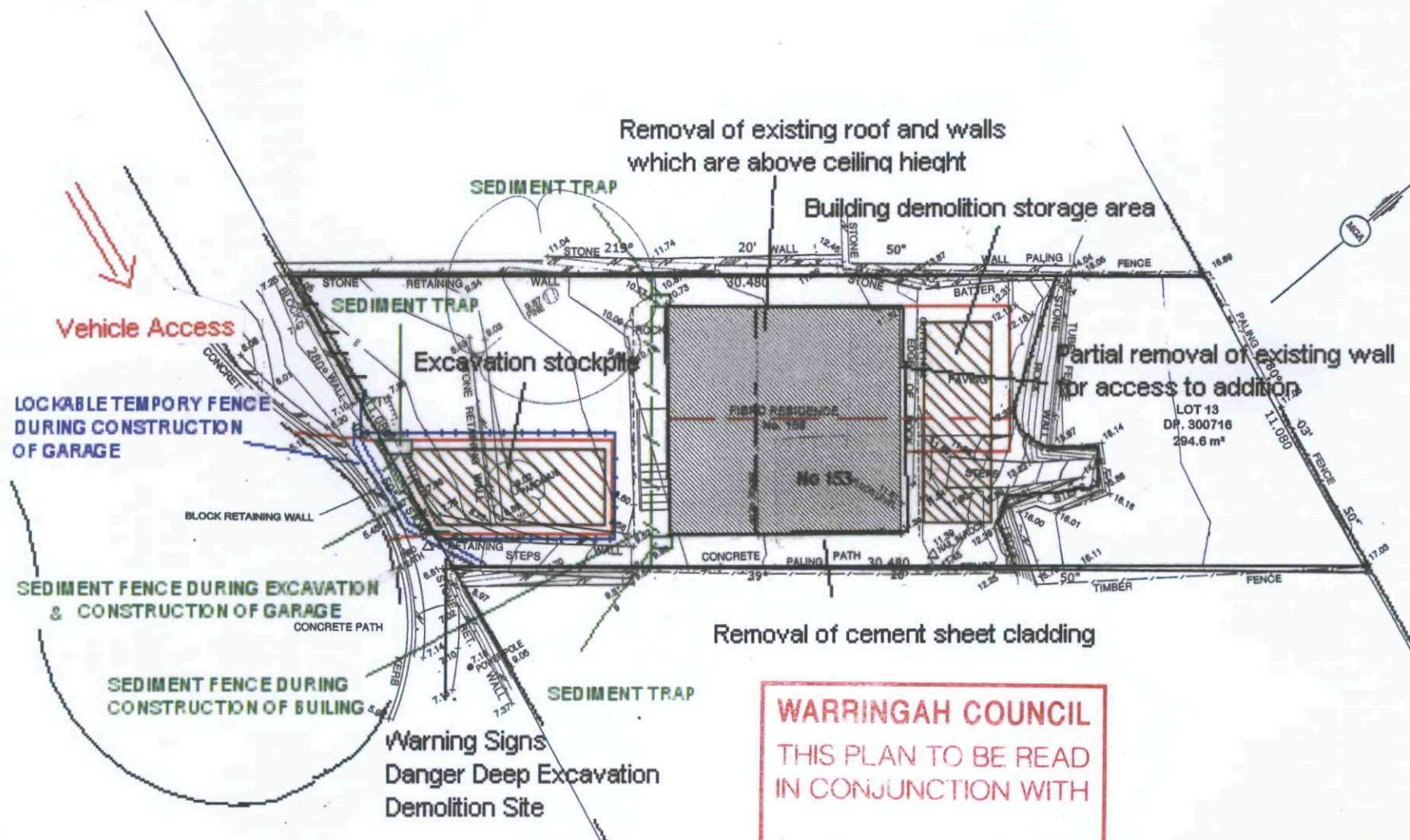
LOCATION: 153 QUEENSCLIFF RD, QUEENSCLIFF  
SCALE 1 : 200

TITLE :	PLAN 11
	EROSION AND SEDIMENT CONTROL PLAN



# NOTES

- 1/ BOUNDARIES HAVE NOT BEEN SURVEYED.
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- 5/ ORIGIN OF LEVELS, SSM 41902-1.908 (AHD)



AS ORIGINAL - DO NOT SCALE  
USE WRITTEN DIMENSIONS

**MD** MACEDO CONSULTING  
PO Box 145  
Griffith NSW 2700

DRAWN: MCD  
VERSION: 1  
DATE: 30/07/09

LOCATION: 153 QUEENSCLIFF RD, QUEENSCLIFF  
SCALE 1:200

TITLE: PLAN 13  
DEMOLITION, EXCAVATION AND WASTE MANAGEMENT

# BASIX Certificate

Building Sustainability Index [www.basix.nsw.gov.au](http://www.basix.nsw.gov.au)

## Alterations and Additions

Certificate number: A63719

This certificate confirms that the proposed development will meet the NSW government's requirements for sustainability, if it is built in accordance with the commitments set out below. Terms used in this certificate, or in the commitments, have the meaning given by the document entitled "BASIX Alterations and Additions Definitions" dated 29/9/2006 published by Department of Planning. This document is available at [www.basix.nsw.gov.au](http://www.basix.nsw.gov.au)

Director-General  
Date of issue: Thursday, 06, August 2009



NSW GOVERNMENT  
Department of Planning

SCANNED  
2010/04/26

## Description of project

Project address	
Project name	Dodds 153 Queenscliff rd
Street address	153 Queenscliff Road Queenscliff 2096
Local Government Area	Warringah Council
Plan type and number	Deposited Plan 300716
Lot number	13
Section number	0
Project type	
Dwelling type	Separate dwelling house
Type of alteration and addition	My renovation work is valued at \$50,000 or more, and does not include a pool (and/or spa).

WARRINGAH COUNCIL  
THIS PLAN TO BE READ  
IN CONJUNCTION WITH  
Construction  
Certificate No. 2010/0190



Fixtures and systems	Show on DA Plans	Show on CC/CDC Plans & specs	Certifier Check
<b>Lighting</b>			
The applicant must ensure a minimum of 40% of new or altered light fixtures are fitted with fluorescent, compact fluorescent, or light-emitting-diode (LED) lamps.		✓	✓
<b>Fixtures</b>			
The applicant must ensure new or altered showerheads have a flow rate no greater than 9 litres per minute or a 3 star water rating.		✓	✓
The applicant must ensure new or altered toilets have a flow rate no greater than 4 litres per average flush or a minimum 3 star water rating.		✓	✓
The applicant must ensure new or altered taps have a flow rate no greater than 9 litres per minute or minimum 3 star water rating.		✓	

Construction			Show on DA Plans	Show on CC/CDC Plans & specs	Certifier Check
Insulation requirements					
The applicant must construct the new or altered construction (floor(s), walls, and ceilings/roofs) in accordance with the specifications listed in the table below, except that a) additional insulation is not required where the area of new construction is less than 2m <sup>2</sup> , b) insulation specified is not required for parts of altered construction where insulation already exists.			✓	✓	✓
Construction	Additional insulation required (R-value)	Other specifications			
suspended floor with enclosed subfloor: framed (R0.7).	R0.60 (down) (or R1.30 including construction)				
floor above existing dwelling or building.	nil				
external wall: concrete block/plasterboard	R1.18 (or R1.70 including construction)				
external wall: framed (weatherboard, fibro, metal clad)	R1.30 (or R1.70 including construction)				
flat ceiling, pitched roof	ceiling: R1.95 (up), roof: foil backed blanket (55 mm)	dark (solar absorptance > 0.70)			



Glazing requirements						Show on DA Plans	Show on CC/CDC Plans & specs	Certifier Check
Windows and glazed doors								
The applicant must install the windows, glazed doors and shading devices, in accordance with the specifications listed in the table below. Relevant overshadowing specifications must be satisfied for each window and glazed door.						✓	✓	✓
The following requirements must also be satisfied in relation to each window and glazed door:							✓	✓
Each window or glazed door with standard aluminium or timber frames and single clear or toned glass may either match the description, or, have a U-value and a Solar Heat Gain Coefficient (SHGC) no greater than that listed in the table below. Total system U-values and SHGCs must be calculated in accordance with National Fenestration Rating Council (NFRC) conditions.							✓	✓
For projections described in millimetres, the leading edge of each eave, pergola, verandah, balcony or awning must be no more than 500 mm above the head of the window or glazed door and no more than 2400 mm above the sill.						✓	✓	✓
Pergolas with polycarbonate roof or similar translucent material must have a shading coefficient of less than 0.35.							✓	✓
Pergolas with fixed battens must have battens parallel to the window or glazed door above which they are situated, unless the pergola also shades a perpendicular window. The spacing between battens must not be more than 50 mm.							✓	✓
Overshadowing buildings or vegetation must be of the height and distance from the centre and the base of the window and glazed door, as specified in the 'overshadowing' column in the table below.						✓	✓	✓
Windows and glazed doors glazing requirements								
Window / door no.	Orientation	Area of glass inc. frame (m <sup>2</sup> )	Overshadowing Height (m)    Distance (m)		Shading device	Frame and glass type		
SD1	E	3.6	1.8	4.3	eave/verandah/pergola/balcony ≥450 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)		
W7	S	1.92	0	0	eave/verandah/pergola/balcony ≥900 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)		
W8	N	1.68	1.5	1	eave/verandah/pergola/balcony ≥450 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)		
W9	E	1.92	2	4.5	eave/verandah/pergola/balcony ≥450 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)		

Glazing requirements							Show on DA Plans	Show on CC/CDC Plans & specs	Certifier Check
Window / door no.	Orientation	Area of glass inc. frame (m2)	Overshadowing Height (m)    Distance (m)		Shading device	Frame and glass type			
W10	E	0.18	0	0	eave/verandah/pergola/balcony >=450 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)			
W11	N	1.92	2.5	4.5	eave/verandah/pergola/balcony >=450 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)			
SD2	S	3.6	20	3.5	eave/verandah/pergola/balcony >=900 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)			
SD3	S	3.6	20	3.5	eave/verandah/pergola/balcony >=900 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)			
SD4	N	3.6	1.5	1.5	eave/verandah/pergola/balcony >=450 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)			



**Legend**

In these commitments, "applicant" means the person carrying out the development.

Commitments identified with a "✓" in the "Show on DA plans" column must be shown on the plans accompanying the development application for the proposed development (if a development application is to be lodged for the proposed development).

Commitments identified with a "✓" in the "Show on CC/CDC plans & specs" column must be shown in the plans and specifications accompanying the application for a construction certificate / complying development certificate for the proposed development.

Commitments identified with a "✓" in the "Certifier check" column must be certified by a certifying authority as having been fulfilled, before a final occupation certificate for the development may be issued.

DO NOT SCALE FROM DRAWINGS - USE ONLY FIGURED DIMENSIONS

A3 ORIGINAL SIZE

## GENERAL

- G1 These drawings shall be read in conjunction with the architectural and other consultants' drawings / specifications and with other such written instructions as may be issued during the construction. Any discrepancy shall be referred to the Engineer before commencing the work.
- G2 All dimensions are in millimeters, UNO (unless noted otherwise).
- G3 These drawings shall not be scaled, refer to dimensions given only or refer to the Architectural drawings.
- G4 All levels and setting out dimensions shown on the drawings shall be checked on site prior to the commencement of the work.
- G5 During construction the structure shall be maintained in a stable condition with no part being overstressed with temporary bracing installed as required.
- G6 The engineer shall approve any proposed substitution prior to the commencement of work.

## LOADING

- L1 Superimposed loads are in accordance with AS 1170.1 or as shown in note L4.
- L2 Wind loads are in accordance with AS 1170.2 as follows:  
Region : A Basic Wind Velocity,  $V_p = 38$  m/s Category : N2 (W33)
- L3 Earthquake loads are in accordance with AS 1170.4 as follows:  
 $a = 0.08$   $S = 1.0$   $I = 1.0$
- L4 Element superimposed loading:

Element	Live Load (kPa)	Dead Load (kPa)
Floors - Internal	1.50	-
Floors - External & Garage	3.00	-
Roof Areas	0.25	-

- L5 Assumed site soil classification is: Class A (Rock site)

## EARTHWORKS

- E1 The earthworks shall be carried out in accordance with the geotechnical report reference UR14236 dated 3rd June 1996 by Jack Hodgson Consultants Pty Ltd.
- E2 The site shall be stripped a minimum depth of 150 mm under pavements and buildings to remove the topsoil. Any remaining uncontrolled fill material, organic material, refuse or roots shall be removed.
- E3 The subgrade shall be inspected and approved by the geotechnical engineer.
- E4 The excavated subgrade shall be proof rolled a minimum of six (6) passes using a vibrating drum roller with a minimum deadweight of 10 tonnes. Any soft, wet and unsuitable spots shall be removed and reinstated using approved material.
- E5 The subgrade shall be compacted to not less than 100% standard dry density ratio within  $\pm 2\%$  of the optimum moisture content in accordance with AS1289.
- E6 Where fill is required to achieve subgrade level it shall be approved ripped sandstone having a maximum particle size of 75 mm. It shall be placed in loose layers no thicker than 300 mm and compacted to not less than 100% standard dry density ratio within  $\pm 2\%$  of the optimum moisture content in accordance with AS1289.
- E7 If a vibrating type roller is used, consideration shall be given to the effects on adjacent properties.
- E8 All batters shall be a minimum of 1:2 for temporary batters and 1:4 for final batters in day material.
- E9 All filling shall be under the supervision of the project geotechnical engineer who shall provide compaction certificates to the engineer for approval.

## FOUNDATION MATERIAL

- F1 Strip & pad footings have been designed for an allowable end bearing value of 500 kPa off rock.
- F2 Bored piers have been designed for an allowable end bearing value of 500 kPa & a skin friction of 50 kPa off rock.
- F3 The foundation material shall be inspected & approved in writing by the geotechnical engineer for the above allowable bearing capacities.
- F4 Slabs on ground have been design for a CBR of 5 in accordance with the Cement & Concrete Association Industrial Floors & Pavement Handbook.
- F5 Footings shall be located centrally under walls & columns UNO.

## REINFORCED CONCRETE

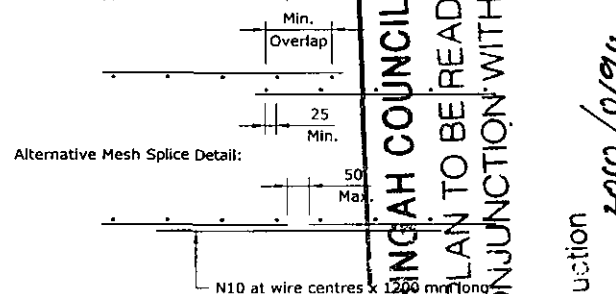
- C1 All workmanship and materials shall be in accordance with AS 3600, except where varied by the project documentation.
- C2 Concrete quality shall be as follows (subject to note C4 being satisfied):

Element	Slump (mm)	Maximum Aggregate size (mm)	Cement Type	Strength 28 Days (MPa)	Admixture
Footings	80	20	Normal	25	-
Bored Piers & Pile Caps	80	20		25	-
Floor Slabs on Ground	80	20	Type A Cement	25	-
Suspended Floor Slabs	80	20		32	-
Hollowcore Floor Slabs	80	20		32	-
Walls & Columns	80	20		32	-

- C3 The engineer shall approve any admixtures to be used in the concrete mix.
- C4 The clear concrete cover to all reinforcement shall be as follows, UNO:

Exposure Classification to AS 3600	Strength 28 Days (MPa)	Against Formwork		Against Ground	
		Interior Surface	Exterior Surface	With Membrane	With No Membrane
A1	20	20	30	30	50
A2	25	40	30	40	50
B1	32	40	40		
B2	40	45	45		

- C5 Cover to reinforcement shall be obtained by the use of approved bar chairs placed at maximum 750 mm centers in each direction.
- C6 All concrete shall be mechanically vibrated and the vibrators SHALL NOT be used to spread the concrete.
- C7 Sizes of the concrete elements do not include thickness of the applied final finishes.
- C8 Approval shall be obtained from the engineer prior to the drilling of any holes or cutting in of any chases other than those shown on the structural drawings.
- C9 Construction joints where not shown on the structural drawings shall be located in accordance with the engineers approval.
- C10 Curing of all concrete is to be achieved by keeping surfaces continuously wet for a period of 7 days (10 days in summer months), and prevention of loss of moisture for a total of 10 days followed by gradual drying out. Approved sprayed on compounds complying with AS3799 may be used provided that they do not interfere with the performance of the proposed floor finishes. Polythene sheeting or wet hessian may be used if protected from wind and traffic.
- C11 The suspended slabs shall be propped until 28 day strength has been achieved for slabs. The formwork may be removed once 20 MPa strength has been achieved, however the slab will need to be back propped until 28 day strength has been achieved. No masonry or partition walls are to be constructed on suspended levels until all propping is removed.
- C12 Conduits, pipes, etc. shall only be placed in the middle third of the slab depth and spaced at not less than 3 diameters. They shall not be placed within the cover of the reinforcement.
- C13 Reinforcement symbols:  
S - Denotes grade 250 S bars to AS1302.  
N - Denotes grade 500 normal ductility deformed bars to AS4671.  
R - Denotes grade 250 normal ductility round bars to AS4671.  
SL - Denotes grade 500 low ductility square welded mesh to AS4671.  
RL - Denotes grade 500 low ductility rectangular welded mesh to AS4671.  
L - Denotes grade 500 low ductility trench welded mesh to AS4671.
- C14 Reinforcement is represented diagrammatically and is not necessarily shown in true projection.
- C15 Splices in reinforcement shall be made only in positions shown or otherwise approved by the engineer.
- C16 Laps and cogs shall be in accordance with AS3600 and not less than the below:
- |     | Minimum Splice Lengths | Minimum Overall Cog Lengths |
|-----|------------------------|-----------------------------|
| N12 | 400 mm                 | 200 mm                      |
| N16 | 600 mm                 | 225 mm                      |
| N20 | 800 mm                 | 275 mm                      |
| N24 | 1100 mm                | 325 mm                      |
| N28 | 1400 mm                | 375 mm                      |
- C17 Site bending of deformed reinforcing bars shall be done without heating and using mechanical bending tools.
- C18 Welding of the reinforcement shall not be permitted unless shown on the structural drawings or approved by the engineer.
- C19 Bundled bars shall be tied together at 30 bar diameter centers with 3 wraps of tie wire.
- C20 Mesh shall be lapped 2 transverse wires plus 25 mm.



## FORMWORK

- W1 All workmanship and materials shall be in accordance with AS 3610 & AS3600, except where varied by the project documentation.
- W2 The design certification & the performance of the formwork shall be the responsibility of the contractor.
- W3 During construction support propping shall be required where there are loads from stacked materials, formwork & other supported slabs. Once the concrete has achieved its nominated 28 day strength, the imposed loads shall not exceed those given in the loading table.
- W4 With multistory construction, it is expected that support propping will extend a minimum of 3 levels below the slab being poured. Prop removal is to be programmed so as not to overstress previously cast floors and shall be submitted to the engineer for approval.
- W5 The suspended slabs shall be propped until 28 day strength has been achieved for slabs. The formwork may be removed once 20 MPa strength has been achieved, however the slab will need to be back propped until 28 day strength has been achieved. No masonry or partition walls are to be constructed on suspended levels until all propping is removed.
- W6 All exposed corners shall have a 20 mm chamfer, UNO.
- W7 All finishes shall be in accordance with the architectural specification.

## PERMANENT METAL FORMWORK

- P1 The permanent metal formwork shall be installed in accordance with the manufacturers recommendations and shall NOT be substituted from the product specified without written approval from the engineer.
- P2 The permanent metal formwork shall be suitably propped.
- P3 The permanent metal formwork shall not be spliced or joined midspan.
- P4 The permanent metal formwork shall have a minimum end bearing of 50 mm.
- P5 The permanent metal formwork shall be fixed to the supporting structure with spot welds or fasteners, there shall be a minimum of 1 fixing per sheet to the support each end adjacent to the side lap.

- P6 The permanent metal formwork may need to have the side lap fastened together midspan, this shall be carried out in accordance with the manufacturers recommendations.

## HOLLOWCORE FLOOR PLANKS & WALL PANELS

- H1 All workmanship & materials shall be in accordance with AS3600.
- H2 The 28 day concrete strength shall be a minimum of 40 MPa.
- H3 The prestressing steel shall be stress relieved low relaxation strand in accordance with AS1311.
- H4 The floor plank topping shall be with 32 MPa concrete or as shown on the drawings. If the topping concrete is used to grout the keyways then the concrete shall have a maximum aggregate size of 10 mm.
- H5 The concrete topping thickness and reinforcement shall be as noted on the plans & sections.
- H6 The hollowcore planks & panels shall be lifted & supported only at the nominated lifting points.
- H7 The hollowcore floor planks shall be installed in accordance with the manufacturers specifications & workshop drawings.
- H8 The structure shall be maintained in a stable condition during the erection of the floor planks or wall panels with temporary bracing provided as required.
- H9 All keyways shall be aligned & grouted with a 3:1 sand : cement mix or approved concrete topping mix. Ensure that all keyways are properly filled.
- H10 Any proposed penetrations &/or chases will require the manufacturers and engineers approval prior to work being carried out.
- H11 A minimum of two (2) copies of all workshop drawings shall be supplied to the engineer for approval.

## MASONRY

- M1 All workmanship and materials shall be in accordance with AS 3700.
- M2 The design strength of masonry shall be:

Exposure Classification to AS 3600	Brick Compressive Strength (MPa)	Brick Salt Resistance Grade	Durability Classification Of Built In Components	Mortar Mix GP Portland e Cement: Lime: Sand	Fc (MPa)
A1 / A2	20	General	R3	1.0 : 1.0 : 6.0	2.8
B1	20	Purpose	(Galvanised)	1.0 : 1.0 : 6.0	2.8
B2	20	Exposure	R4 (Stainless)	1.0 : 0.5 : 4.5	2.8

- M3 All masonry walls supporting concrete slabs and beams shall have a slip joint comprising of two layers of galvanized steel in between the concrete and masonry.
- M4 All masonry walls supporting or supported by concrete floors shall have vertical joints located to match any control / construction joints in the concrete.
- M5 Do not construct any masonry walls on suspended slabs until the slab formwork has been stripped and de-propped.
- M6 Non load bearing masonry walls shall be separated from concrete slab or beam above by 20 mm thick compressible filler.
- M7 Provide vertical control joints at 8 meters maximum centers, and 4 meters maximum from corners in masonry walls, and between new & existing brickwork. The joint shall have expansion joint ties and suitably sealed with a mastic sealant.
- M8 Masonry retaining walls are to be back filled with either of the following material:  
- Coarse grained soil with low silt content  
- Residual soil containing stones  
- Fine silty sand  
- Granular materials with low clay content

## BLOCKWORK

- B1 All workmanship and materials shall be in accordance with AS 3700.
- B2 Reinforced concrete blockwork shall comply with the following, UNO:  
- Blocks: Minimum 10 MPa unconfined compressive strength conforming to AS4455.  
- Mortar: 1.0 : 1.0 : 6.0 ratio of cement : lime : sand UNO.  
- Blocks shall be either 'H' or 'Double-U' configuration.  
- Provide cleanout holes at the base of the wall & rod core holes to remove excess mortar.  
- Core filling shall be 20 MPa concrete with maximum 10 mm aggregate size with a maximum slump of 120  $\pm$  20 mm.  
- Minimum cover of 55 mm from the outside of the blockwork.
- B3 Blockwork retaining walls are to be back filled with either of the following material:  
- Coarse grained soil with low silt content  
- Residual soil containing stones  
- Fine silty sand  
- Granular materials with low clay content
- B4 Vertical control joints shall be provided at maximum 8000 mm centers. They shall be reinforced with N20-400 dowels 600 mm long. One end shall be greased & capped.
- B5 No admixtures shall be used to the mortar mix or the core fill mix without prior written consent from the engineer.

## STRUCTURAL STEELWORK

- S1 All workmanship and materials shall be in accordance with AS 4100 and AS/NZS 4600.
- S2 The structural design has been based on the following steel grades, UNO:  
Hot rolled universal beams, columns, channels & angles: 300PLUS  
Circular, square & rectangular hollow sections: C350/C450LO  
Cold formed open DuraGal profiles: C350/C450LO  
Cold formed lipped Cee & Zed purlins: G550/G500/G450
- S3 The structural design has been based on MBPMA nominal size Cee & Zed lipped purlins.
- S4 Qualifications of welding procedures and personnel shall conform to Section 4 of AS 1554.1. Non destructive testing of welds shall include dual inspection and additional testing as shown on the drawings.
- S5 All welds shall be 6 mm continuous fillet type SP, UNO. All butt welds shall be complete penetration in accordance with AS 1554.1, UNO.

## Bolt designation:

- 4.6/S Commercial bolts to AS 1111, snug tightened.
- 8.8/S High strength structural bolts to AS 1562, snug tightened.
- 8.8/TB High strength structural bolts to AS 1562, fully tensioned bearing joint.
- 8.8/TF High strength structural bolts to AS 1562, fully tensioned friction joint.
- S7 All bolts shall be M20 8.8/S, with a minimum of 2 bolts per connection, UNO.
- S8 Fin plates shall be a minimum of 10 mm thick, grade 300PLUS steel, UNO.
- S9 Concrete encased steelwork shall be wrapped with SL62 mesh and shall have a minimum of 50 mm cover, UNO.
- S10 Steelwork not encased in concrete shall have the following surface treatment:

Exposure Classification to AS 3600	Steelwork Protection Required
A1 / A2	Power tool clean to AS1627 Class 1 1 Coat Alkyd Primer (Zinc Phosphate)
B1	Abrasive blast to AS1627 Class 2.5 1 Coat Inorganic Zinc Silicate
B2	Hot Dipped Galvanised to AS1650

- S11 Where sealed tube members are hot dip galvanized, the fabricator shall provide drill holes as necessary to allow gases to escape.
- S12 All transport and erection damage, site welds etc., shall be reinstated to an equivalent finish to adjacent steelwork.
- S13 A minimum of two (2) copies of all workshop drawings shall be supplied to the engineer for approval.

## PRECAST PANELS

- Y1 All workmanship and materials shall be in accordance with AS 3600.
- Y2 The precast panel concrete strength at 28 days shall be a minimum of 40 MPa. The concrete shall be a minimum of 20 MPa before removal from molds.
- Y3 Dimensions shown are final concrete sizes and additional concrete must be provided to allow for loss of structural thickness due to surface treatment, etc.
- Y4 Panel structural thickness shall be as noted.
- Y5 Refer to the architectural drawings for dimensions, rebates, etc.
- Y6 All metal work and cast-in ferrules shall be hot dipped galvanized which are exposed to the external environment.
- Y7 All cast-in ferrules shown on the drawings are to remain sealed until the erection of the panel and shall not be used for lifting.
- Y8 Lifting ferrules are the contractors responsibility & extra reinforcement needs to be provided in accordance with manufacturers recommendations.
- Y9 Concrete cover shall be in accordance with structural drawings.
- Y10 Fabric in the panels shall be one sheet, no lapping is permitted unless shown on the structural drawings.
- Y11 Penetrations for services shall be neat formed holes, hole boring is not permitted.
- Y12 Temporary steel packers may be used under the panels provided they have a minimum of 50 mm cover from the concrete slab or grout.
- Y13 A minimum of two (2) copies of all workshop drawings shall be supplied to the engineer for approval. The shop drawings shall show all cast-in inserts.

## TIMBER

- T1 All workmanship and materials shall be in accordance with AS 1684 and AS1720.
- T2 AS1684 shall be applied to domestic construction in sheltered locations.
- T3 Softwood to be a minimum of F7 and hardwood to be a minimum of F17 UNO.
- T4 External timber shall be either hardwood durability class I or II as per AS1720 or impregnated pine grade F7, pressure treated to AS1604 and re-dried prior to use. Supplementary treatment shall be applied to all cut surfaces.
- T5 Two (2) copies of timber truss shop drawings shall be submitted to the engineer for approval, clearly indicating design loads and point loads applied to the structure.
- T6 All bolts in timber construction shall be M16 4.6/S UNO. Washers under heads and nuts shall be at least 2.5 times the bolt diameter.
- T7 All timber joints and notches shall be a minimum of 100 mm away from loose knots, severe sloping grain, gum veins or other minor defects.

## FOUNDATION MAINTENANCE

- X1 All soils are affected by water. Silts are weakened by water and some sands can settle if heavily watered, but most problems arise on clay foundations. Clays swell and shrink due to changes in moisture content and the potential amount of the movement is implied in the site classification in Australian Standard AS2870, which is specified as follows:  
A Stable (Non-reactive). S Slightly Reactive.  
M Moderately Reactive. H Highly Reactive.  
E Extremely Reactive.
- X2 All sites shall be maintained at essentially stable moisture conditions and extremes of wetting and drying prevented. This will require attention to the following.
- X3 Site drainage: The site shall be graded or drained so that water cannot pond against or near the house. The ground immediately adjacent to the house shall be graded to a uniform fall of 50 mm minimum away from the house over the first meter. The sub floor space for houses with suspended floors shall be graded or drained to prevent ponding. The site drainage requirements shall be maintained.
- X4 Gardens: The gardens shall not interfere with the drainage requirements or the sub floor ventilation and weep hole drainage systems. Garden beds adjacent to the house should be avoided. Over watering of gardens close to the house shall be avoided.
- X5 Restrictions on trees / shrubs: Planting of trees shall be avoided near the footings of a house or neighboring house on reactive sites as they can cause damage due to drying of the clay. To minimize the possibility of damage, tree planting should be restricted to a distance from the house of:  
1.50 x mature height for Class E sites  
1.00 x mature height for Class H sites  
0.75 x mature height for Class M sites
- X6 Where rows or groups of trees are involved, the distance from the building should be increased. Removal of trees from the site can also cause similar problems.
- X7 Repair of leaks: Leaks in plumbing, including storm water and sewerage drainage should be repaired promptly.

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## E2 Civil And Structural Design

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0420 947 978  
chris@e2design.com.au

Chris Hodgson  
REGISTERED ENGINEER



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STRUCTURAL  
DESIGN

ABN 40 338 639 129

CLIENT:  
**DODDS**

PROJECT NAME:  
**PROPOSED ALTERATIONS & ADDITIONS  
153 QUEENSCLIFF ROAD  
QUEENSCLIFF NSW 2096**

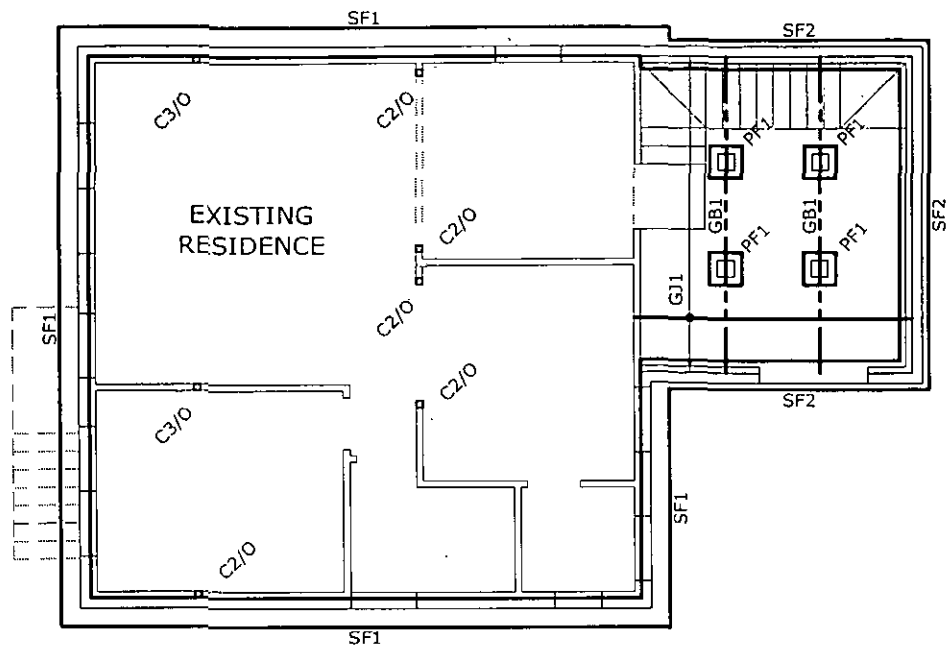
DRAWING TITLE:  
**General Notes**

SCALE:	DATE: 12 Mar 2010	DRAWN: CJE
PROJECT:	DRAWING: <b>10.011</b>	REV: <b>0</b>

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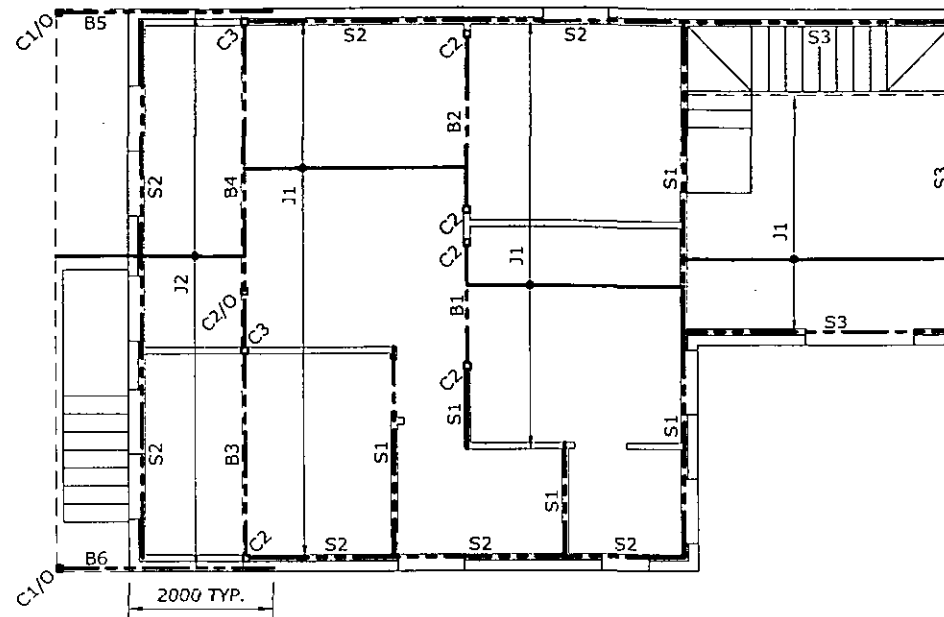
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STRIP & PAD FOOTING PLAN 1:100

- Extra bars as noted on plan & sections.
- 25 MPa Minimum concrete strength, typical unless noted otherwise.
- Site preparation shall be carried out in accordance with the current edition of AS2870 Residential slabs & footings construction code & with the general notes.
- Reinforcement cover to the ground floor slab shall be as follows:
  - 40mm - To unprotected ground
  - 40mm - To external exposure
  - 30mm - To a vapor barrier in contact with the ground
  - 30mm - To internal exposure
- All footings shall be founded off rock.
- GB1 = 100 Deep x 63 Wide H2-S LVL bearers
- GB2 = 100 Deep x 45 Wide H2-S LVL joists a 450 c/c

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THIS PLAN TO BE READ  
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FIRST FLOOR FRAMING PLAN 1:100

DESIGN CRITERIA:

Site Soil Classification = A  
Wind Classification = W33 (N2)  
Construction Type = Clad Frame  
(Existing)  
Articulated  
Masonry Veneer  
(Proposed)  
Roof Cladding Type = Metal Sheetting  
(Note: Masonry shall be articulated in accordance with technical note 61 from the Cement & Concrete Association of Australia)

EXPOSURE CLASSIFICATION:

Interior Surfaces = A1  
Exterior Surfaces = B1

BLOCKWORK WALL NOTE:

Vertical control joints shall be installed at 8000mm centers with N20-400 reinforcement (600 long). One end shall be greased & capped

TIMBER FRAMING NOTE:

All timber framing, connections, fixings, notches, etc shall be in installed in accordance with AS1684-2006: Residential Timber Framed Construction (non-cyclonic areas) and the current edition of the Building Code of Australia.

STRUCTURAL STEEL & TIMBER FRAMING SCHEDULE			
MARK	TYPE	SECTION SIZE	COMMENT
B1	Beam	2 / 240 Deep x 45 Wide LVL	Hyspan
B2	Beam	2 / 240 Deep x 45 Wide LVL	Hyspan
B3	Beam	2 / 240 Deep x 45 Wide LVL	Hyspan
B4	Beam	250 UB 25.7	300 Plus
B5	Beam	200 PFC 22.9	300 Plus
B6	Beam	200 PFC 22.9	300 Plus
J1	Floor Joists	HJ240-45 @ 450 c/c	Hyspan
J2	Floor Joists	200 Deep x 45 Wide LVL @ 450 c/c	Hyspan
S1	Spreader	240 Deep x 45 Wide LVL	Hyspan
S2	Spreader	150 Deep x 63 Wide LVL	Hyspan
S3	Spreader	240 Deep x 63 Wide LVL	Hyspan
C1	Column	75 x 75 x 4.0 SHS	C350LO
C2	Column	70 x 70 MGP10 Pine	Seasoned
C3	Column	70 x 105 MGP10 Pine	Seasoned

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PROPOSED ALTERATIONS & ADDITIONS  
153 QUEENSCLIFF ROAD  
QUEENSCLIFF NSW 2096

DRAWING TITLE:

Footing & First Floor Framing Plan

SCALE:  
1:100

PROJECT:

10.011

DATE:  
12 Mar 2010

DRAWING:

S2

DRAWN:  
CJE

REV:

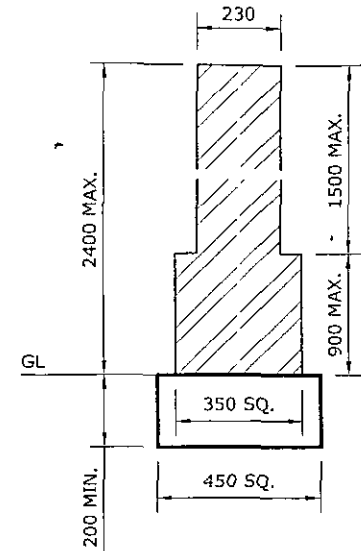
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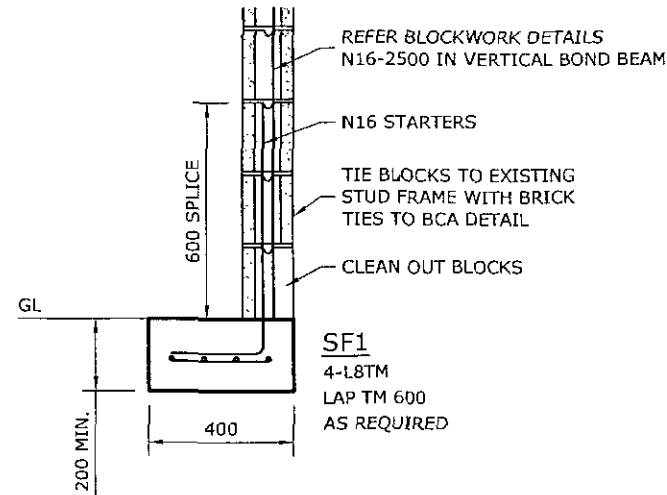
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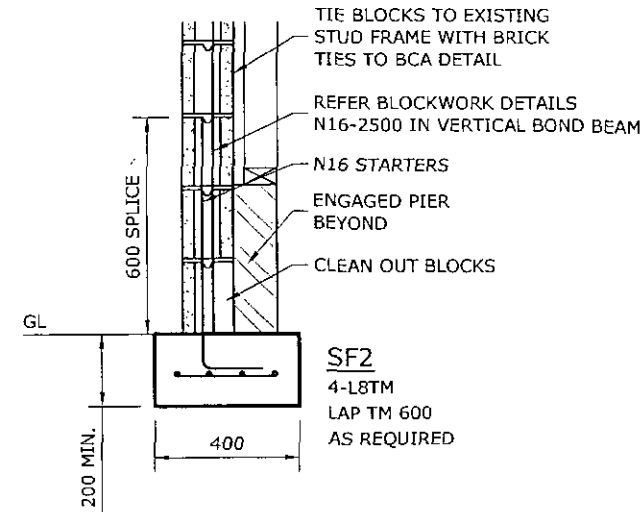
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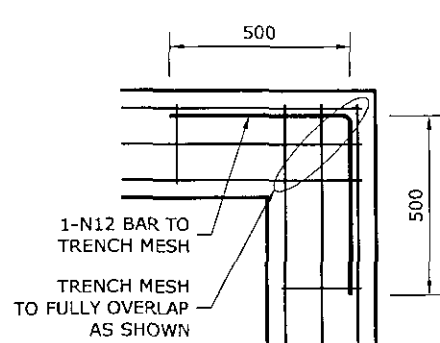
PAD FOOTING 'PF1' DETAIL 1:20



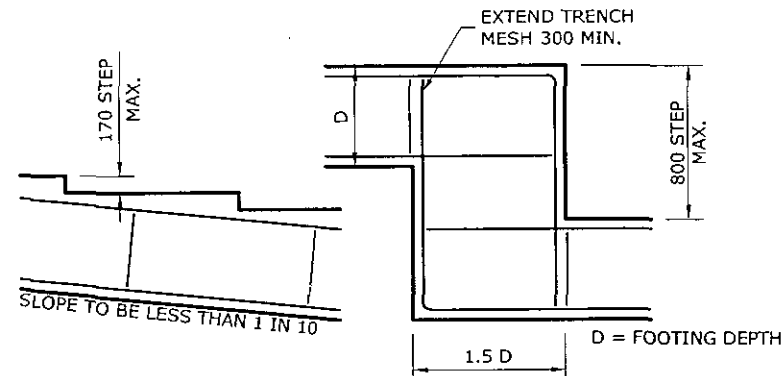
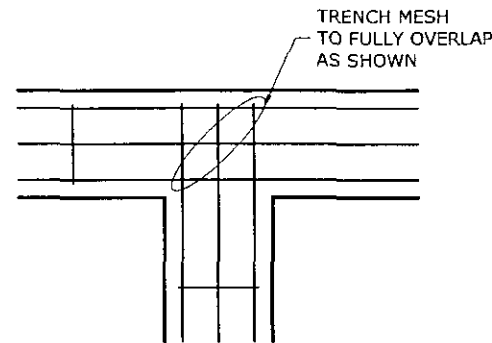
STRIP FOOTING 'SF1' DETAIL 1:20



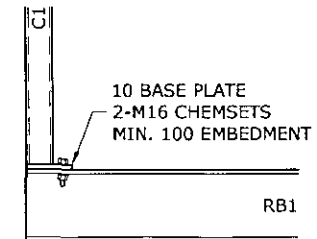
STRIP FOOTING 'SF2' DETAIL 1:20



FOOTING CORNER DETAIL 1:20




FOOTING STEP DETAIL 1:20



'RB1' TO 'RB4' CONNECTION 1:20

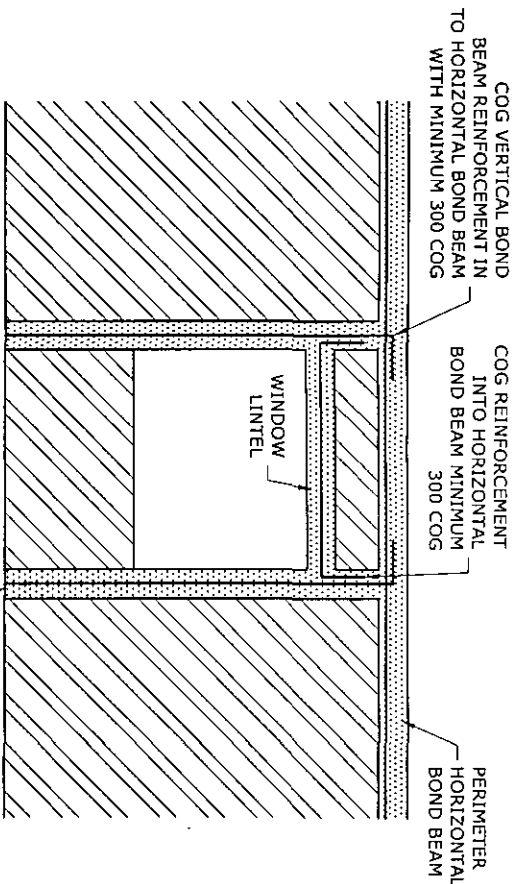
**BLOCKWORK WALL NOTE:**  
Vertical control joints shall be installed at 8000mm centers with N20-400 reinforcement (600 long). One end shall be greased & capped

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Certificate No. 2010/0190

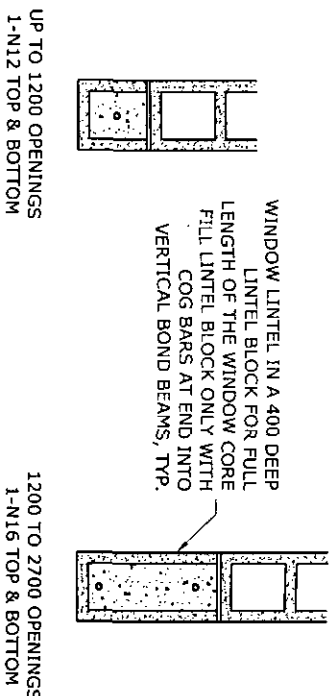
COPYRIGHT: e2 Civil & Structural Design is the owner of the copyright subsisting in these drawings, plans, designs and specifications. They must not be used, reproduced or copied in whole or in part without prior written consent of e2 Civil & Structural Design.			E2 Civil And Structural Design P.O. Box 608 WAVERLEY NSW 2024 0420 947 978 chris@e2civilandstructural.com.au		CLIENT: <b>DODDS</b>		DRAWING TITLE: <b>Ground Floor Details Sheet 1</b>		
REV.	APP.	AMENDMENT DESCRIPTION	DATE	 ABN 40 338 639 129	PROJECT NAME: <b>PROPOSED ALTERATIONS &amp; ADDITIONS 153 QUEENSCLIFF ROAD QUEENSCLIFF NSW 2096</b>		SCALE: 1:20	DATE: 12 Mar 2010	DRAWN: CJE
							PROJECT: <b>10.011</b>	DRAWING: <b>S3</b>	REV: <b>0</b>



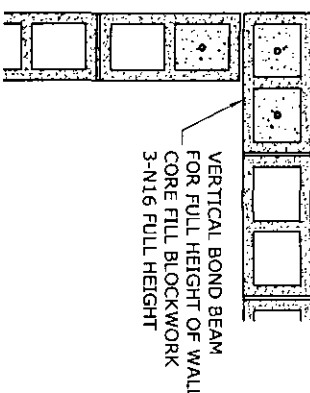
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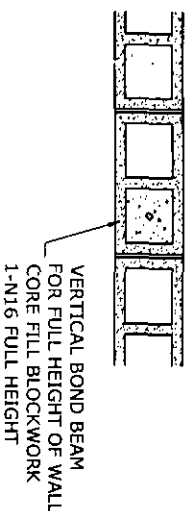
TYPICAL BOND BEAM ELEVATION



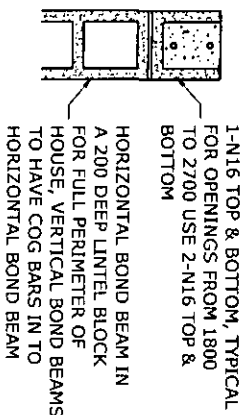
WINDOW LINTEL DETAILS 1:20



CORNER VERTICAL BOND BEAM DETAIL 1:20



VERTICAL BOND BEAM DETAIL 1:20



HORIZONTAL BOND BEAM DETAIL 1:20

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A3 ORIGINAL SIZE

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**DODDS**  
**PROJECT NAME:**  
**PROPOSED ALTERATIONS & ADDITIONS**  
**153 QUEENSCLIFF ROAD**  
**QUEENSCLIFF NSW 2096**

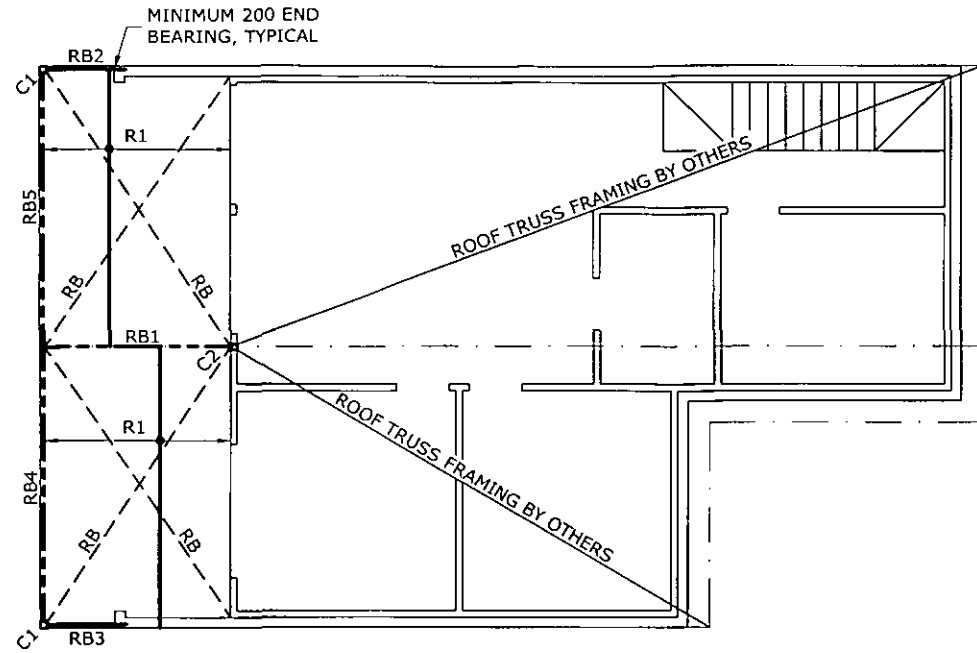
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PROJECT: 10.011	DRAWING: S4	REV: 0

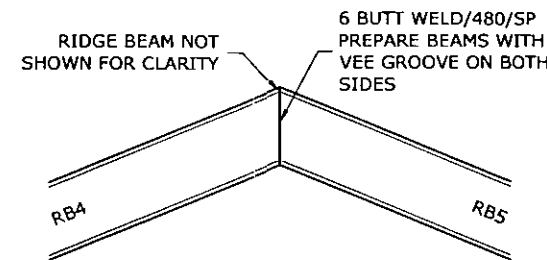


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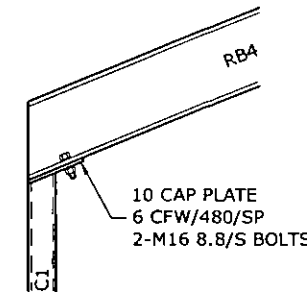
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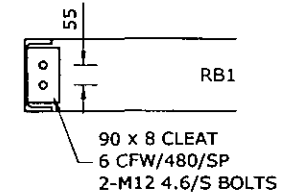
ROOF FRAMING PLAN 1:100



'RB4' TO 'RB5' CONNECTION 1:20



'C1' TO 'RB4' CONNECTION 1:20  
'C1' TO 'RB5' SIMILAR



'RB1' TO 'RB4' CONNECTION 1:20  
'RB2' & 'RB3' TO 'RB4' / 'RB5' SIMILAR

**TIMBER FRAMING NOTE:**

All timber framing, connections, fixings, notches, etc shall be installed in accordance with AS1684-2006: Residential Timber Framed Construction (non-cyclonic areas) and the current edition of the Building Code of Australia.

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STRUCTURAL STEEL & TIMBER FRAMING SCHEDULE			
MARK	TYPE	SECTION SIZE	COMMENT
RB1	Roof Beam	200 Deep x 45 Wide LVL	Hyspan
RB2	Roof Beam	200 Deep x 45 Wide LVL	Hyspan
RB3	Roof Beam	200 Deep x 45 Wide LVL	Hyspan
RB4	Roof Beam	200 PFC 22.9	300 Plus
RB5	Roof Beam	200 PFC 22.9	300 Plus
R1	Rafter	200 Deep x 45 Wide LVL @ 600 c/c	Hyspan
RB	Roof Brace	32 x 1.0 Strap	G250
C1	Column	75 x 75 x 4.0 SHS	C350LO
C2	Column	70 x 70 MGP10 Pine	Seasoned

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PROJECT NAME:

**PROPOSED ALTERATIONS & ADDITIONS  
153 QUEENSCLIFF ROAD  
QUEENSCLIFF NSW 2096**

DRAWING TITLE:

**Roof Framing Plan & Details**

SCALE:  
1:100

DATE:  
12 Mar 2010

DRAWN:  
CJE

PROJECT:  
**10.011**

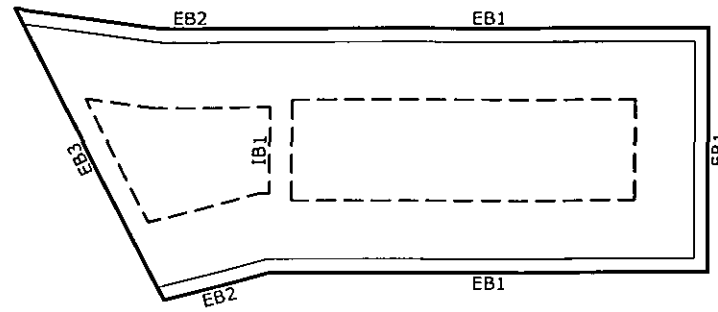
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REV:  
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REV.	APP.	AMENDMENT DESCRIPTION	DATE
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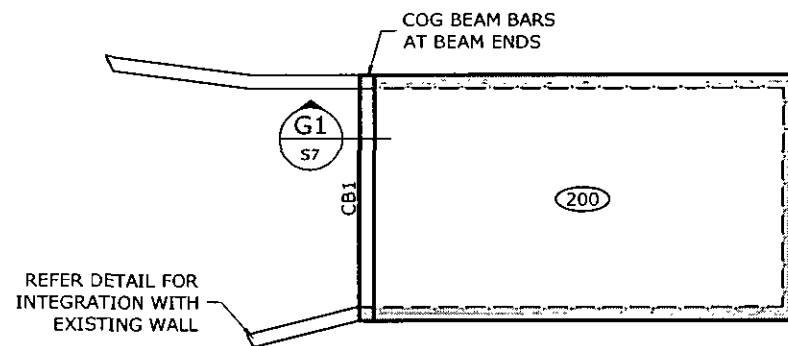


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**GARAGE FLOOR RAFT SLAB PLAN** 1:100

- 100 thick slab with SL82 mesh top continuous throughout.
- 2N12 (1200 long) Trimmer bars shall be located at all re-entrant corners, typical.
- Extra bars as noted on plan & sections.
- 25 MPa Minimum concrete strength, typical unless noted otherwise.
- Site preparation shall be carried out in accordance with the current edition of AS2870 Residential slabs & footings construction code & with the general notes.
- Reinforcement cover to the ground floor slab shall be as follows:
  - 40mm - To unprotected ground
  - 50mm - To external exposure
  - 30mm - To a vapor barrier in contact with the ground
  - 30mm - To internal exposure
- Bored piers shall be in accordance with the bored pier note and as shown on plan.

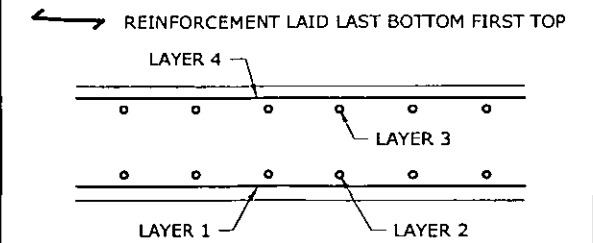


**GARAGE ROOF SLAB PLAN** 1:100

- (200) Denotes 200 thick 40MPa slab with N12-200 each way top & btm continuous throughout.
- f'c = 40MPa
- Cover = 45mm

**REINFORCEMENT NOTE:**

**REINFORCEMENT LAYERS:**



**MINIMUM SPLICE LENGTHS:**

N12 = 400  
N16 = 600  
N20 = 800

**MINIMUM COG LENGTHS:**

N12 = 200  
N16 = 225  
N20 = 275  
N24 = 325  
N28 = 375

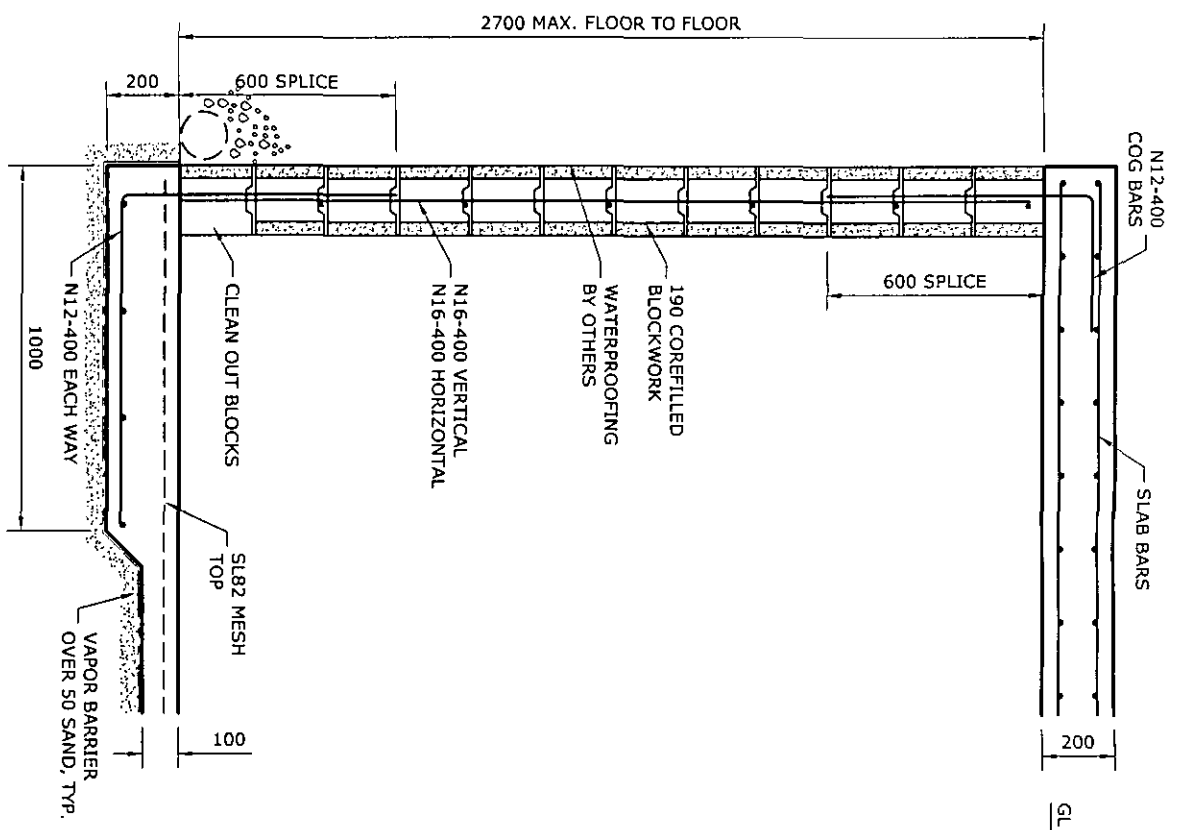
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A3 ORIGINAL SIZE

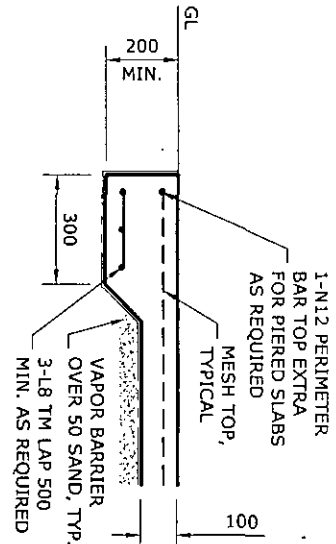
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				<b>PROJECT NAME:</b> <b>PROPOSED ALTERATIONS &amp; ADDITIONS</b> <b>153 QUEENSCLIFF ROAD</b> <b>QUEENSCLIFF NSW 2096</b>		<b>SCALE:</b> <b>1:100</b>		<b>DATE:</b> <b>12 Mar 2010</b>	<b>DRAWN:</b> <b>CJE</b>	
						<b>PROJECT:</b> <b>10.011</b>		<b>DRAWING:</b> <b>S6</b>	<b>REV:</b> <b>0</b>	
REV.	APP.	AMENDMENT DESCRIPTION		DATE						

DO NOT SCALE FROM DRAWINGS - USE ONLY FIGURED DIMENSIONS

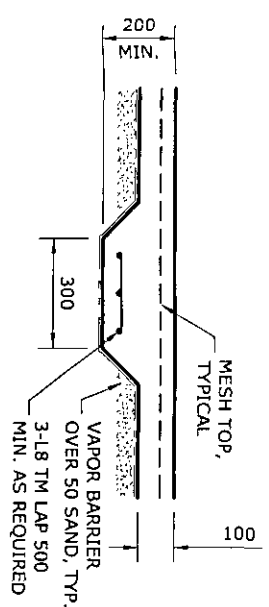
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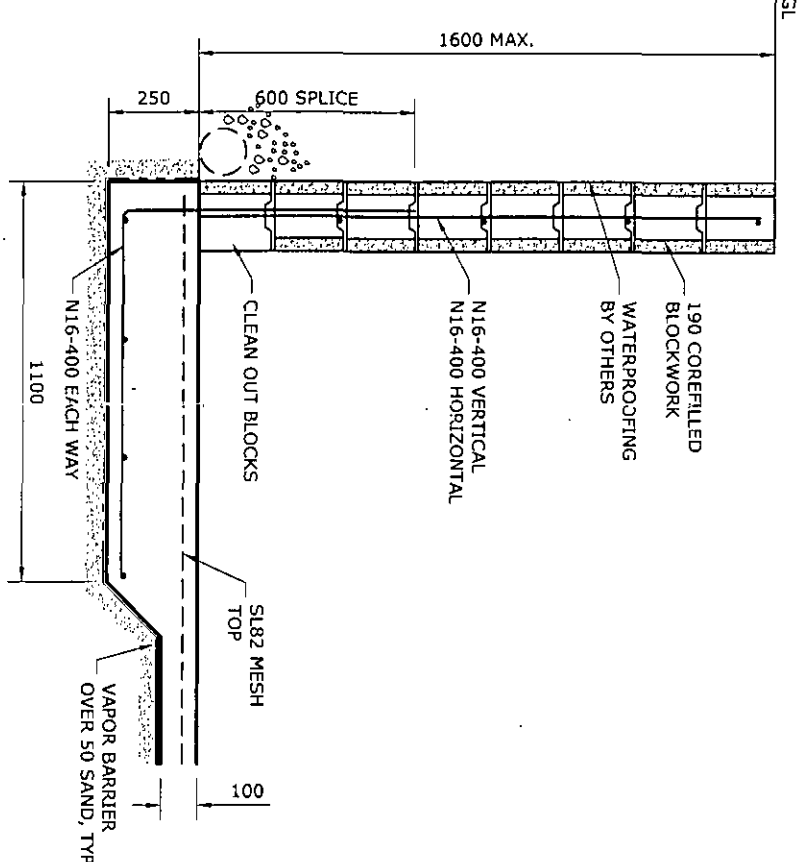
EDGE BEAM DETAIL 'EB1' 1:20



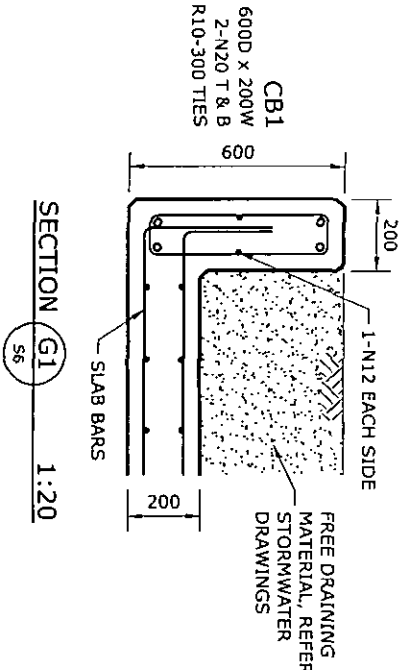
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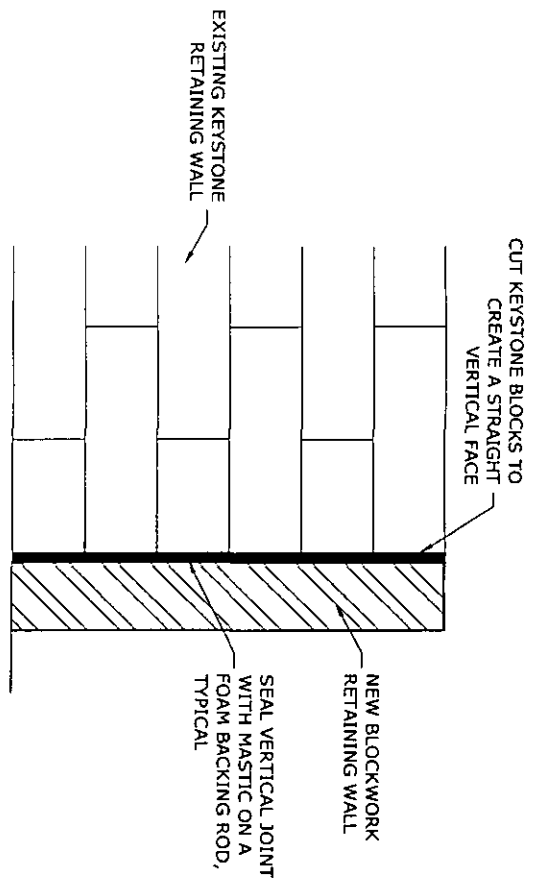
INTERNAL BEAM DETAIL 'IB1' 1:20



EDGE BEAM DETAIL 'EB2' 1:20



SECTION G1 1:20



RETAINING WALL INTEGRATION DETAIL 1:20

WARRINGAH COUNCIL  
THIS PLAN TO BE READ  
IN CONJUNCTION WITH  
Construction  
Certificate No. 2010/0190

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CLIENT:  
**DODDS**

PROJECT NAME:  
**PROPOSED ALTERATIONS & ADDITIONS  
153 QUEENSCLIFF ROAD  
QUEENSCLIFF NSW 2096**

DRAWING TITLE:  
**Garage Details**

SCALE:  
1:20  
DATE:  
12 Mar 2010

PROJECT:  
**10.011**  
DRAWING:  
**S7**  
REV:  
**0**

REV.	APP.	AMENDMENT DESCRIPTION	DATE

ABN 40 338 639 129



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PROJECT NAME:  
**PROPOSED ALTERATIONS & ADDITIONS  
153 QUEENSCLIFF ROAD  
QUEENSCLIFF NSW 2096**

DRAWING TITLE:  
**Garage Details**

SCALE:  
1:20  
DATE:  
12 Mar 2010

PROJECT:  
**10.011**  
DRAWING:  
**S7**  
REV:  
**0**