

BUSHFIRE HAZARD ASSESSMENT



Site Details:
Lot 16
Parent Lot/DP 32/5464
House No. (Unknown)
Bubalo Street
Warriewood NSW 2102

Report Prepared for:
Mr Baxter
C/- Rawson Homes Pty Ltd
Building F, Level 2, Suite 1
1 Homebush Bay Drive
Rhodes NSW 2138

Construction of a two storey dwelling

Executive Summary

As required by Northern Beaches Council a bushfire risk assessment has been carried out in accordance with the procedures and requirements outlined in *Planning for Bushfire Protection* (2006) *Addendum – Appendix 3* (2010) as issued by the NSW Rural Fire Service (RFS). A summary of the findings of this assessment are provided below. Subject to the recommendations provided in this report, the proposed development has the potential to comply with the aims and objectives of *Planning for Bushfire Protection* (2006).

Site Address							
				Lot 16 DP 1216899 Parent Lot/DP 32/5464 Bubalo Street Warriewood NSW 2102			
GPS Coordinates							
				Latitude:		-33.686971	
				Longitude:		151.299532	
Aspect							
				South West			
Fire Danger Index Applied							
				FDI 100			
Vegetation Classifications							
North East	Managed Land	South East	Managed Land	South West	Forest	North West	Managed Land
Distance to Vegetation							
North East	>140m	South East	>140m	South West	136m	North West	>140m
Effective Slope							
North East	N/A	South East	N/A	South West	Flat / Upslope	North West	N/A
Bushfire Attack Level							
North East	BAL-LOW	South East	BAL-LOW	South West	BAL-LOW	North West	BAL-LOW

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1. Project Brief

We have been engaged by Rawson Homes Pty Ltd to assess the threat posed to this development in the event of a bushfire. Current fire maps prepared by Northern Beaches Council in accordance with the requirements of Section 146 of the *Environmental Planning and Assessment Act 1979* (as amended) (EPAA) indicate that the site is situated within a bushfire prone area (BPA). The aim of this report is to identify the Bushfire Attack Level (BAL) to which the proposed development should be constructed under *AS 3959-2009: Construction of buildings in bushfire-prone areas* and the NSW variations as contained within *Addendum: Appendix 3 of Planning for Bushfire Protection* (2010) by the NSW Rural Fire Service to outline the provisions required to facilitate the fighting of bushfires.

The site is located at Lot 16, Parent Lot/DP 32/5464, Bubalo Street, Warriewood NSW 2102.

This report will supplement the development application to Northern Beaches Council for the proposed development of a new dwelling and has been prepared in accordance with the procedures and requirements contained within *Planning for Bushfire Protection* (2006) – *A Guide for Councils, Planners, Fire Authorities and Developers* with *Addendum: Appendix 3* (2010) as issued by the NSW Rural Fire Service.

The report relies upon the following information:

- Inspection of the site
- Details of the proposed dwelling produced by Rawson Homes Pty Ltd (See Appendix 2)

2. Introduction

As required by Northern Beaches Council and in accordance with the requirements of Section 79BA of EPAA, a bushfire assessment of the site has been carried out. This was done in accordance with the procedures and requirements contained within *AS 3959-2009* and *Addendum: Appendix 3* (2010) of *Planning for Bushfire Protection* (2006) as issued by the NSW Rural Fire Service. The findings have been outlined in this report to determine compliance with the Building Code of Australia.

The assessment of the site found that any development on the site is not at significant risk of bushfire attack. Construction to the Bushfire Attack Level of **BAL-LOW** to all elevations of the proposed building is recommended.

3. The Proposed Development

The proposed development is a two storey dwelling. The dwelling will feature a living room, dining, kitchen, home theatre, four bedrooms with three bathrooms and double garage. The development will have a building footprint area totalling 143.05m². Landscaped areas are proposed to cover approximately 200.07m² (53.35%) of the site.

The building will be on a waffle concrete slab with steel frames and timber roof trusses. A brick and boarding veneer with a concrete tile roof covering will form the façade of the dwelling.

4. Assessment of Site Characteristics

The site is located in suburb of Warriewood, within Northern Beaches Local Government Area. The site is located on Bubalo Street, which will provide access to the property. The site borders onto similar lots on the north eastern, south eastern and south western aspects. The north western aspect of the site faces a roadway, then onto managed lands.

The site is rectangular in shape, with a street frontage of 12.5 metres, with the total subject lot size being 375m².

The development site has downward slope from the left of the property to the right. Figure 1 below displays the allotment boundaries and their surroundings as given by the NSW Government 'SixMaps' website.



Figure 1 – Aerial Mapping showing the lot boundary (NSW SixMaps 2019)

All aspects of the subject site face towards vacant lots ready for the construction of similar dwellings or public infrastructure assets such as roadways and footpaths. These properties and assets are reduced vegetation forms (i.e. maintained lawns and gardens) as well as areas of non-vegetation (i.e. dwellings, roads, paths, ancillary structures) and as such, are not considered to harbour any predominant vegetation formations which are described in *Planning for Bushfire Protection* (2006). Any future developments within this area should come under the R3 – Medium Density Residential planning codes as per Pittwater Local Environmental Plan 2014.



Figure 2 – Photograph showing the northern aspect of the site



Figure 3 – Photograph showing the eastern aspect of the site



Figure 4 – Photograph showing the southern aspect of the site



Figure 5 – Photograph showing the western aspect of the site

As seen within Figures 2-5, all aspects of the site look towards a landscape that is classified as 'Managed Land' as defined within AS 3959-2009. This landscape surrounds the entire site from a 100m distance, with no prominent vegetation in this area.

The vegetation toward the south western aspect was classified as 'Forest', as defined in AS 3959-2009. This is due to the vegetation being dominated by eucalypts with crowns that either touch or overlap. A prominent understorey is present. This vegetation was measured to be within 140m from the proposed developments location. As such this vegetation was noted in accordance with the Site Methodology procedure given in Section A3.5 of *Addendum: Appendix 3 of Planning for Bushfire Protection* (2010) however it was not considered to warrant any BAL construction requirements as specified in Table 2.4.2 of AS 3959-2009.

4.1 Slope

The intensity and rate spread of fires burning uphill increases markedly with increasing slope. This is reflected in an increase in the fire hazard index for a particular fuel type with an increasing slope. Similarly the rate of spread and intensity of fires decreases when they burn downhill. Table 1 below outlines the general slope underneath the vegetation measured to be within 140m of the proposed dwelling to all elevations:

Table 1: Effective Slope

Elevation	Slope	Degrees (°)
North Eastern	-	-
South Eastern	-	-
South Western	Flat / Upslope	0-5°
North Western	-	-

These slope measurements are based on measurements acquired during a site inspection on the 7th November 2019, a site plan prepared by Rawson Homes Pty Ltd (Job no. A008108 – Issue D, Dated 30/09/2019).

4.2 Surrounding Vegetation Types

The fuel categories in *Planning for Bushfires Protection* are described using botanical terminology, such as “forest” and “grassy woodland”. It should be noted that when used for bushfire hazard assessment these terms refer to the fuel production capacity and flammability of different vegetation types. Therefore their meaning and application for bushfire hazard assessment may differ from their use in a strictly botanical context.

There are not any prominent forms of vegetation within a 100m distance of the proposed dwelling location. This is based on measurements taken during the site inspection and supplemented by satellite image data from Nearmap. Figure 6 displays a 140m radius surrounding the site. While the vegetation to the south west of the site was measured to be within 140m, the vegetation did not contribute to any BAL requirements.

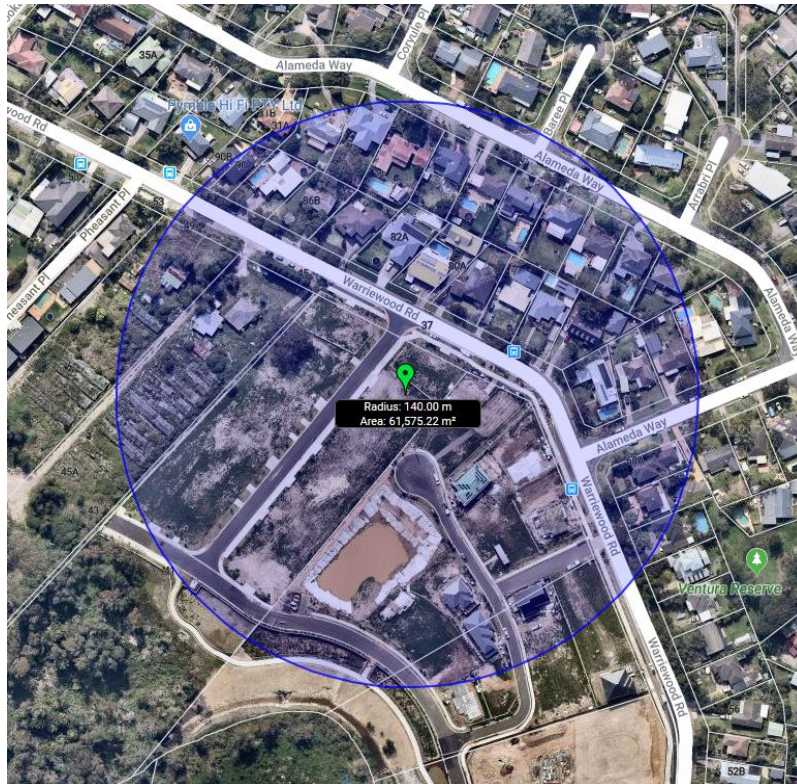


Figure 6 – 140m radius of the proposed dwelling (Nearmap 2019)

Using the information provided on the site plan produced by Rawson Homes Pty Ltd and by measuring distances as part of the site inspection, the distance between the proposed developments façade to predominant vegetation was determined and is given in Table 2.

Table 2: Setbacks from vegetation

Facade	Distance to Predominant Vegetation
Northern	>140m
Eastern	>140m
Southern	136m
Western	>140m

4.3 Category of Bushfire Attack

In accordance with the Table 2.4.2 of *AS 3959-2009*, all elevations of the proposed development have been determined as being located within an area of a Bushfire Attack Level considered LOW (BAL-LOW). This is due to there being insufficient risk to warrant specific Bushfire construction requirements. This is predicated on low threat vegetation and non-vegetated areas surrounding the site. Table 3 outlines the construction requirements for the proposed development elevations.

Table 3: BAL construction requirements for the development

Elevation	Level of Construction as per AS 3959-2009
Northern	BAL – LOW
Eastern	BAL – LOW
Southern	BAL – LOW
Western	BAL – LOW

5. Construction and Landscaping Recommendations

This site has been assessed to be within an area that will require a bushfire attack level of **BAL-LOW for all elevations of the dwelling**. Attached as an Appendix 1 are the construction requirements for BAL-LOW from Section 4 of Australian Standard *AS3959-2009: Construction of buildings in bushfire prone areas*.

However, even though the dwelling is located within 140m of bushfire threatening vegetation, the following construction and landscaping techniques are recommended to mitigate the risk of potential ember attack from this vegetation:

- Using non-combustible gutter and valley guards in the dwelling to limit the accumulation of debris in gutters.
- Storage of combustible materials as far from the dwelling as possible

6. Conclusion

In conclusion, construction standards for building within bushfire-prone areas are set out in Australian Standard AS 3959-2009: *Construction of Buildings in Bushfire Prone Areas. Addendum: Appendix 3* (2010) of *Planning for Bushfire Protection* (2006) provides a procedure for determining the category of bushfire attack and the appropriate level of construction. It is considered that the proposed dwelling is not at particular risk warranting a specific construction standard as given in AS 3959-2009, hence a **BAL-LOW rating** is recommended for the proposed development.

However, as the development is located within 140m of bushfire threatening vegetation, the following recommendations are made for the dwelling to mitigate the risk of ember attack:

- Using non-combustible gutter and valley guards in the dwelling to limit the accumulation of debris in gutters.
- Storage of combustible materials as far from the dwelling as possible



Craig Hardy
MBA; M.App.Sc.(Env.Toxicology); B.App.Sc.(Env.Health)
Accredited Certifier – Building Surveying A2 – 0167
BPAD-D Certified Practitioner – 24168

November 2019

7. References

- Nearmap Pty Ltd (2019) *PhotoMaps by Nearmap*. Available: <http://maps.au.nearmap.com/>. Last accessed 13/11/19
- NSW Rural Fire Service (2006) *Planning for Bushfire Protection, A Guide for Councils, Planners, Fire Authorities, Developers and Home Owners*. NSW Rural Fire Service, Lidcombe NSW.
- NSW Rural Fire Service (2010) *Planning for Bushfire Protection: Addendum Appendix 3*. NSW Rural Fire Service, Lidcombe NSW.
- NSW State Government. (2019). *SixMaps*. Available: <https://maps.six.nsw.gov.au/>. Last accessed 13/11/19
- Ramsay C & Dawkins D (1993) *Building in Bushfire Prone areas – Information and Advice*. CSIRO and Standards Australia.
- Standards Australia (2009) *Australian Standard AS 3959–2009: Construction of Buildings in Bushfire-Prone Areas*. SAI Global Ltd, Sydney.

8. Appendices

1. Proposed Development Plans provided by Rawson Homes Pty Ltd – Job no. A008108, Issue D, Dated 30/09/2019



RAWSON HOMES

— EST 1978 —

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DETAILS SHOWN ON THESE PLANS ARE INTENDED TO BE
ACCURATE - HOWEVER INFORMATION WRITTEN INTO
INDIVIDUAL CONTRACTS WILL TAKE PRECEDENCE OVER PLANS

* DO NOT SCALE - USE WRITTEN DIMENSIONS

RAWSON HOMES PTY LTD WILL TAKE NO RESPONSIBILITY FOR ANY VERBAL DISCUSSIONS OR INSTRUCTIONS. ALL CHANGES AND SPECIAL INCLUSIONS MUST BE DOCUMENTED IN WRITING

SHEET	DRAWING TITLE
01	COVER SHEET
02	SITE PLAN
03	GROUND FLOOR PLAN
04	FIRST FLOOR PLAN
05	ELEVATIONS 1
06	ELEVATIONS 2
07	SECTION & BASIX
08	WET AREA DETAILS
09	SLAB PLAN (NOT INCL. IN SET)
10	SEDIMENT & SITE ANALYSIS
11	STORMWATER PLAN
12	SHADOW DIAGRAM
KP	KITCHEN PLANS

[illegible]

SIGNATURE.....

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1 HOMEBUSH BAY DRIVE
BUILDING F, LEVEL 2, SUITE 1
RHODES NSW 2138
TELEPHONE: 02 8765 5500
FAX : 02 8765 8099
BUILDER'S LICENCE No. 33493C



HOUSETYPE:	
MODEL:	BENHAM 24 MKII
FACADE:	TREND
TYPE:	GARAGE
SPECIFICATION:	LUX

DRAWN BY:	DATE DRAWN:	CHECKED BY:	APPROVED FOR CONSTRUCTION:
DTT	10.07.19	DTT	

SCALE:	
	NTS

DRWG No.:	01
-----------	----

ISSUE:
D

SITE NOTE:
BEFORE STARTING WORK ON SITE
CHECKING FOLLOWING:
1. SERVICE LOCATIONS.
2. SEWER CONNECTION POSITION.
3. DRIVEWAY ALIGNMENT & LEVELS
DP INDICATES DOWNPIPE LOCATION

BAS

- WARNING -
UNREGISTERED PLAN

LEGEND

DT - DENOTES DEAD TREE PP - POWER POLE
EB - ELECTRICAL BOX SMH - SEWER MAN HOLE
EM - ELECTRICAL METER SIO - SEWER INSPECTION OPENING
G - GAS METER SV - SEWER VENT PIPE STOP VALVE
H - HYDRANT S - DENOTES TREE STUMP
R - HYDRANT RECYCLED SWP - DENOTES STORM WATER PIT
KO - DENOTES KERB OUTLET T - DENOTES TREE
LP - LIGHT POLE TP - TELESTRA PIT
LH - LAMP POLE WT - WATER TAG
MH - MAN HOLE WM - WATER METER
BENCH MARK GULLY PIT
PHOTO POINT VEHICULAR CROSSING

DRIVEWAY AND FRONT PATH TO COMPLY WITH AS2890

0.65M FALL ACROSS BUILDING ENVELOPE

N2 WIND CATEGORY

GENERAL SITING NOTES

- ALL PROPOSED FINISH FLOOR LEVELS AND CUT/FILL REQUIREMENTS SUBJECT TO CONFIRMATION UPON COMPLETION OF ARCHITECTURAL PLANS.
- ALL PROPOSED FINISH FLOOR LEVELS ARE SUBJECT TO CONFIRMATION WITH STEP-DOWNS NOMINATED PRIOR TO EXCAVATION BY BUILDER, EXCAVATOR AND/OR CONCRETOR.
- ALL FLOOR AREA CALCULATIONS ARE TO BE CONFIRMED UPON THE COMPLETION OF FINAL ARCHITECTURAL PLANS.
- ALL ALLOWANCES FOR STEPS/STAIRS THAT MAY BE REQUIRED ARE SUBJECT TO FINAL ARCHITECTURAL PLANS.
- ALL ALLOWANCES FOR RETAINING WALLS ARE SUBJECT TO FINAL ARCHITECTURAL PLANS.

EXISTING TREES GREATER THAN 8m IN HEIGHT
WITHIN 3m OF THE PROPOSED BUILDING OR ANY
TREES WITHIN PROPOSED DRIVEWAY TO BE REMOVED
BY OWNER PRIOR TO CONSTRUCTION



SITE CALCULATIONS DA	
GROUND FLOOR	104.98 m²
FIRST FLOOR	104.51 m²
TOTAL LIVING AREA	209.49 m²
SITE AREA	375.00 m²
BUILDING FOOTPRINT	143.05 m²
DRIVEWAY & PATH	31.88 m²
TOTAL LANDSCAPE AREA	200.07 m²
LANDSCAPE AREA (%)	53.35 %
FLOOR SPACE RATIO	0.56 :1
SITE COVERAGE	38.15 %

NOTES:

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EXCLUDING FINISHED SURFACES

RAWSON HOMES

1 HOMEBUSH BAY DRIVE
BUILDING F, LEVEL 2, SUITE 1
RHODES NSW 2138
TELEPHONE: 02 8765 5500
FAX : 02 8765 8099
BUILDER'S LICENCE No. 33493C



CLIENT:
Mr ROBERT ALEXANDER MCDONALD BAXTER

SITE ADDRESS:
PROPOSED LOT 16, UNREGISTERED,
PROPOSED ROAD
WARRIEWOOD NSW 2102

HOUSETYPE:
MODEL: BENHAM 24 MKII
FACADE: TREND
TYPE: GARAGE
SPECIFICATION: LUX

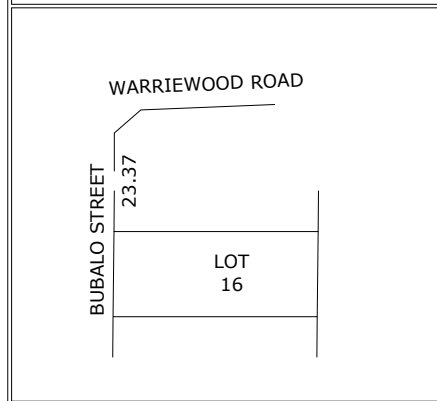
DRAWING TITLE:
SITE PLAN

DRAWN BY: DTT
DATE DRAWN: 10.07.19
CHECKED BY: DTT
APPROVED FOR CONSTRUCTION:

COUNCIL AREA:
PITTWATER
SCALE:
1:200

JOB No:
A008108
DRWG No.:
02
ISSUE:
D

LOCATION PLAN



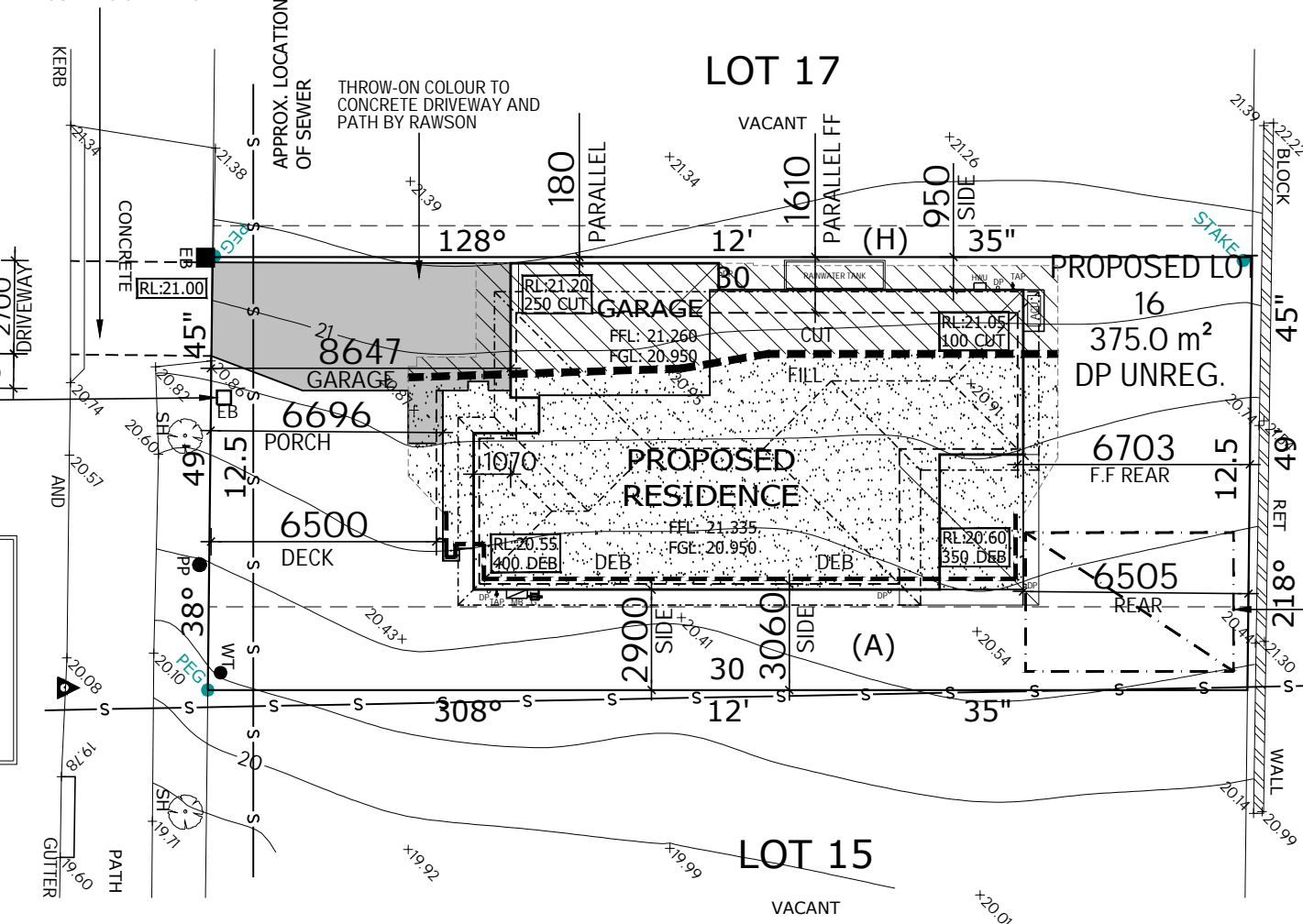
(A): EASEMENT FOR SEWER PURPOSES 5 WIDE (VIDE 6390813)
(H): EASEMENT FOR ACCESS & MAINTENANCE 0.9 WIDE

APPROX. LOCATION OF
ELECTRICAL BOARD
RELOCATED BY
DEVELOPER

PROPOSED ROAD

BENCH MARK
BM 15 NAIL IN KERB
RL 20.00 (ASSUMED)

PROPOSED VEHICULAR
CROSSOVER BY DEVELOPER AS
PER SUBDIVISION PLANS

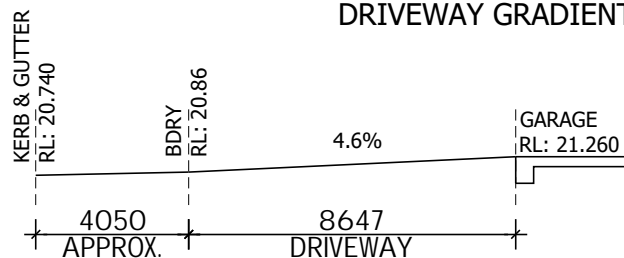


LOT 22
DP 270907

24m2 (4x6) PRINCIPAL
PRIVATE OPEN SPACE

APPROX. LOCATION
OF SEWER

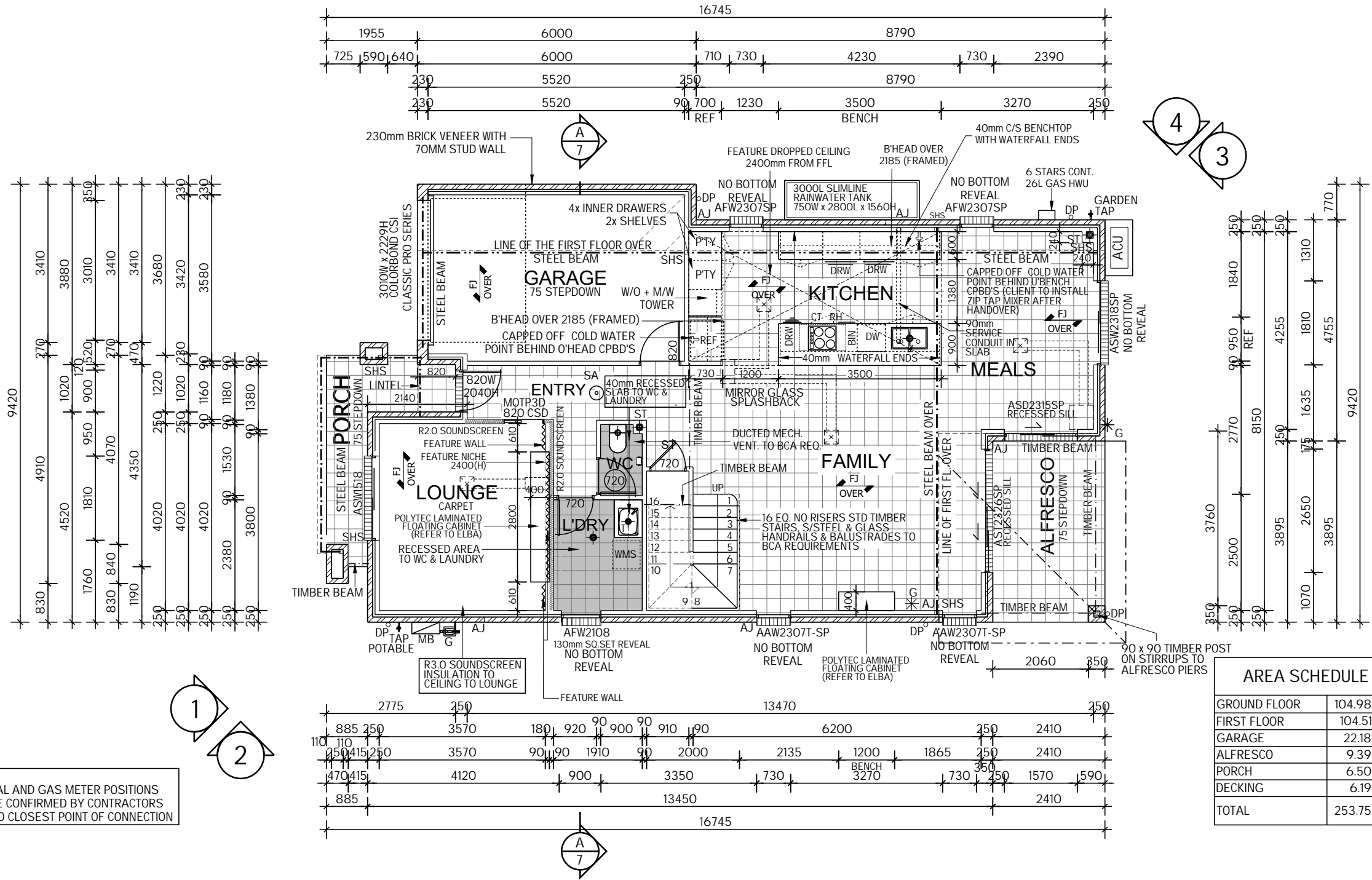
DRIVEWAY GRADIENT



- HEIGHT OF ALL SQ.SETS 2400mm FROM FFL UNLESS OTHERWISE SHOWN TO GROUND FLOOR ONLY.
- HEIGHT OF ALL INTERNAL DOORS 2340H TO GROUND FLOOR ONLY (EXCLUDING ROBES DOORS & DOOR UNDER STAIRS).
- ALL EXTERNAL DOORS TO BE FITTED WITH DRAFT EXCLUSION DEVICE
- WC DOORS TO BE FITTED WITH LIFT-OFF HINGES
- WIND CLASSIFICATION N2 RATING
- WINDOW OPENING SIZES TO BE CHECKED BEFORE FRAMES ARE CONSTRUCTED
- FRAMES & TRUSSES TO SATISFY AS 1684 SAA TIMBER FRAMING CODE
- ROOF SPACE TO BE VENTILATED BY EAVE VENTS
- POSITIONS OF OUTLETS, RETURN AIR AND NUMBER OF DROPPERS IS DETERMINED BY AIR CONDITIONING CONTRACTOR.
- "10mm AIRSTEP-MAX PREMIUM GOLD FOAM" CARPET UNDERLAY UPGRADE TO LOUNGE, BEDROOM 1, BEDROOM 1 WIR, BEDROOM 2, BEDROOM 3, BEDROOM 4, MEDIA, HALLWAY AND STAIRCASE

AIR-CONDITIONING ZONE:
-ZONE 1: GROUND FLOOR
-ZONE 2: FIRST FLOOR

UNDER-FLOOR HEATING TO KITCHEN &
FAMILY AREA ONLY



NOTES:

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SITE ADDRESS:

PROPOSED LOT 16, UNREGISTERED,
PROPOSED ROAD
WARRIEWOOD NSW 2102

HOUSETYPE:

MODEL: BENHAM 24 MKII
FACADE: TREND
TYPE: GARAGE
SPECIFICATION: LUX

DRAWING TITLE:

GROUND FLOOR PLAN

DRAWN BY:

DTT

DATE DRAWN:

10.07.19

CHECKED BY:

DTT

APPROVED FOR
CONSTRUCTION:

COUNCIL AREA:

PITTWATER

SCALE:

1:100

JOB No:

A008108

DRWG No.:

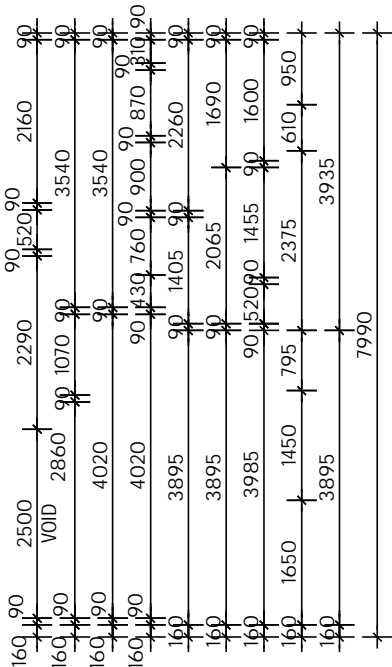
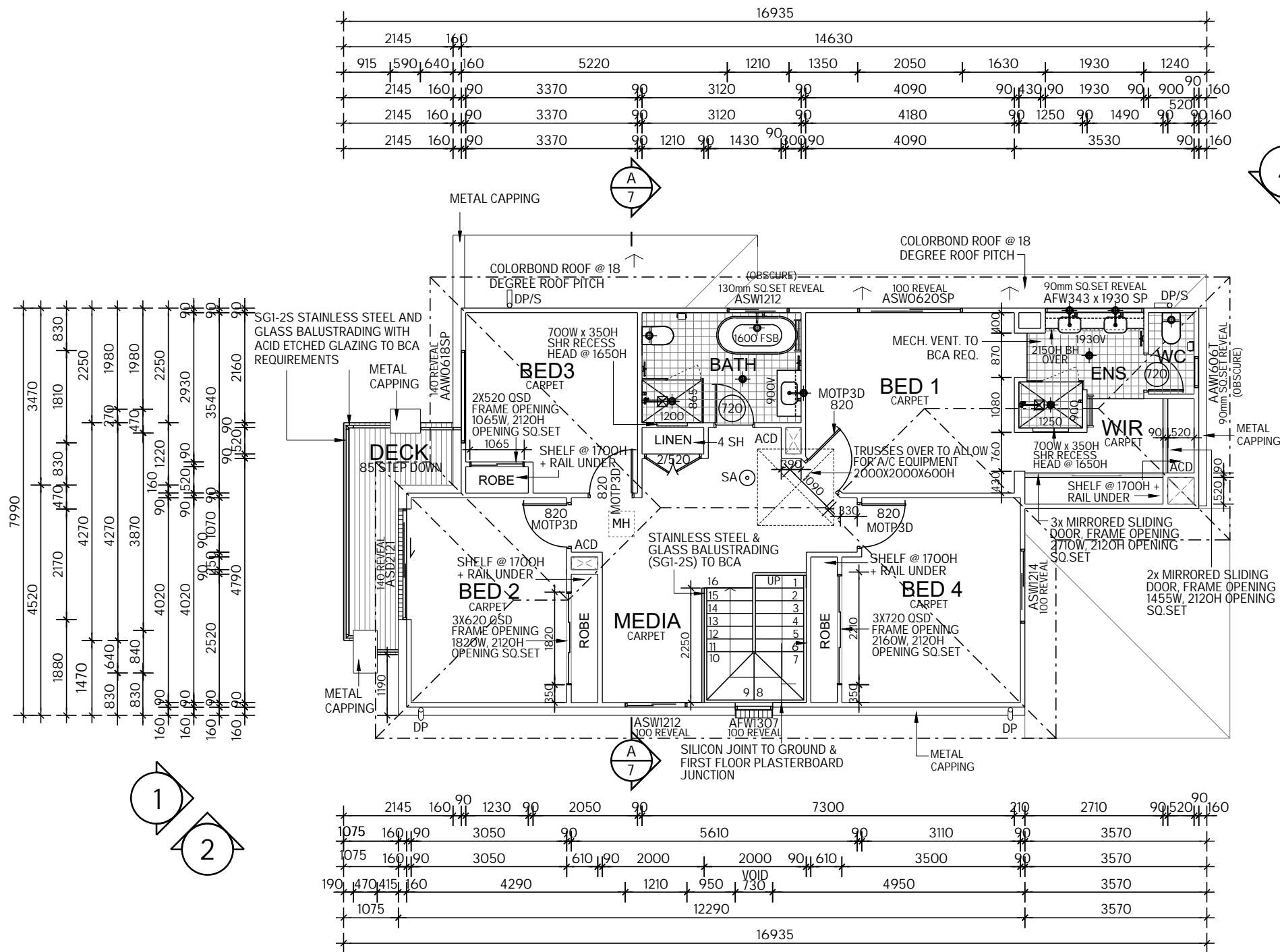
03

ISSUE:

D

- HEIGHT OF ALL SQ.SETS 2150mm FROM FFL UNLESS OTHERWISE SHOWN.
- HEIGHT OF ALL INTERNAL DOORS 2040H TO FIRST FLOOR
- ALL EXTERNAL DOORS TO BE FITTED WITH DRAFT EXCLUSION DEVICE
- WC DOORS TO BE FITTED WITH LIFT-OFF HINGES
- WIND CLASSIFICATION N2 RATING
- WINDOW OPENING SIZES TO BE CHECKED BEFORE FRAMES ARE CONSTRUCTED
- FRAMES & TRUSSES TO SATISFY AS 1684 SAA TIMBER FRAMING CODE
- ROOF SPACE TO BE VENTILATED BY EAVE VENTS
- RESTRICTORS TO BE FITTED TO ALL 1ST FLOOR OPENABLE WINDOWS WITH A SILL HEIGHT LESS THAN 1.7 M ABOVE FFL. IN ACCORDANCE WITH BCA CLAUSES 3.9.2.5
- "10mm AIRSTEP-MAX PREMIUM GOLD FOAM" CARPET UNDERLAY UPGRADE TO LOUNGE, BEDROOM 1, BEDROOM 1 WIR, BEDROOM 2, BEDROOM 3, BEDROOM 4, MEDIA, HALLWAY AND STAIRCASE

AIR-CONDITIONING ZONE:
-ZONE 1: GROUND FLOOR
-ZONE 2: FIRST FLOOR



STAIR VOID

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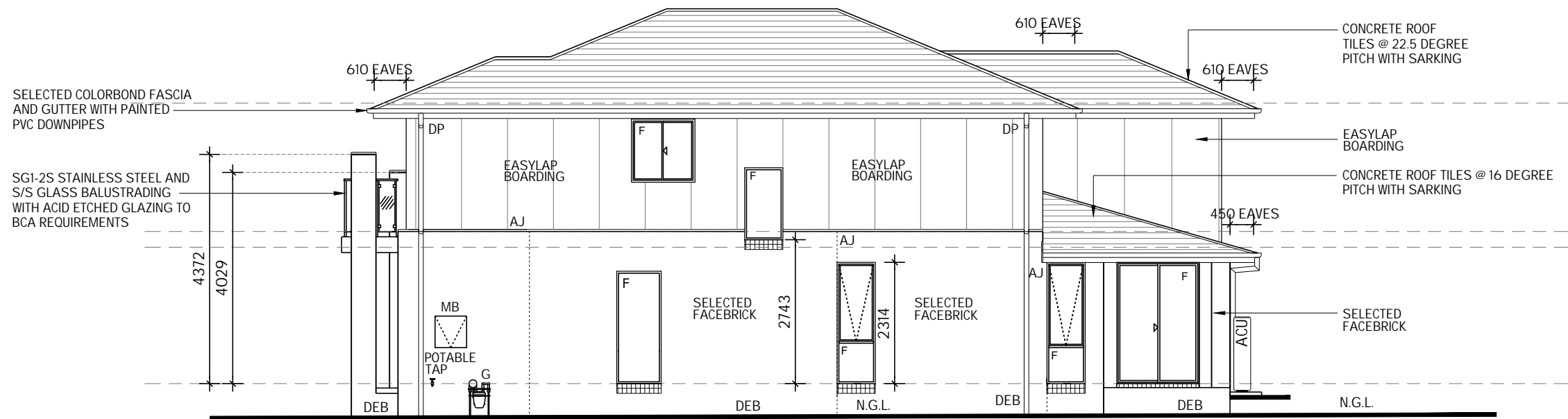
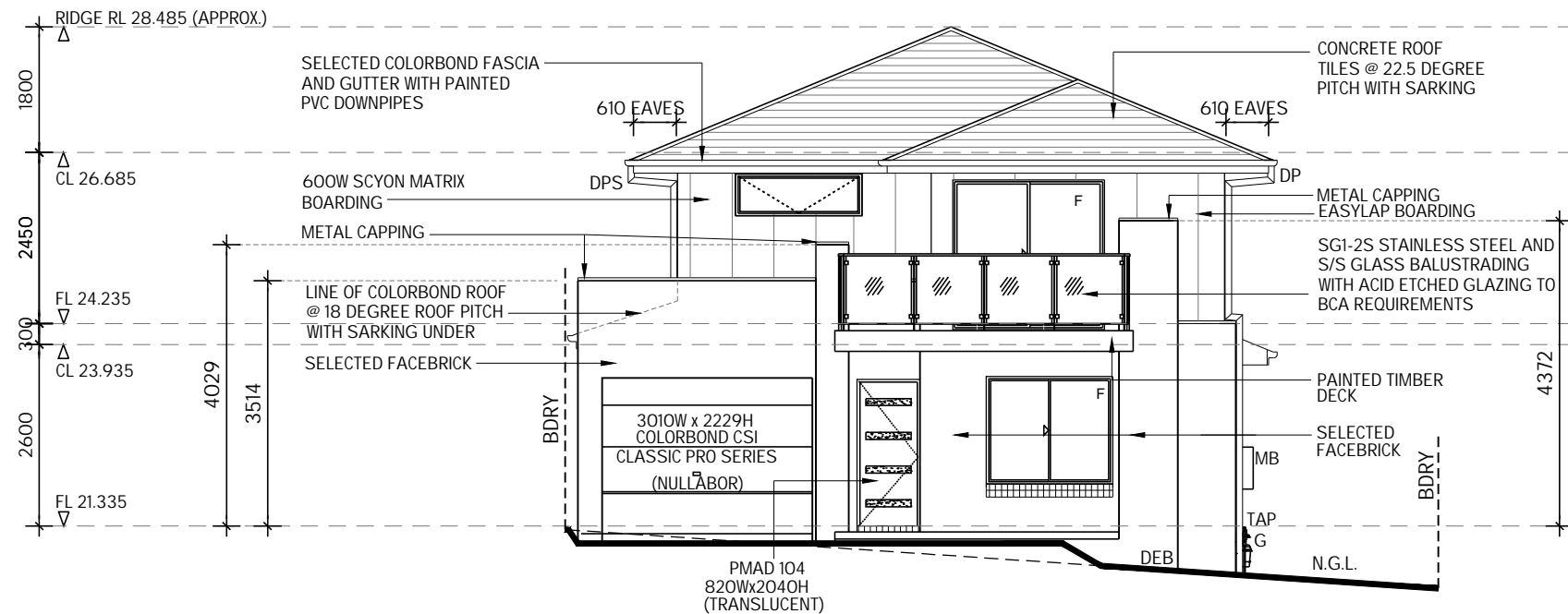
SITE ADDRESS:
PROPOSED LOT 16, UNREGISTERED,
PROPOSED ROAD
WARRIEWOOD NSW 2102

HOUSETYPE:
MODEL: BENHAM 24 MKII
FACADE: TREND
TYPE: GARAGE
SPECIFICATION: LUX

DRAWING TITLE:
FIRST FLOOR PLAN

DRAWN BY:	DATE DRAWN:	CHECKED BY:	APPROVED FOR CONSTRUCTION:
DTT	10.07.19	DTT	
COUNCIL AREA:		SCALE:	
PITTWATER		1:100	
JOB No:	DRWG No.:	ISSUE:	
A008108	04	D	

NOTE:
NYLON MESH FLYSCREENS TO ALL OPENING
WINDOWS, SLIDING & STACKER DOORS
(EXCLUDING HINGED DOORS)



NOTES:

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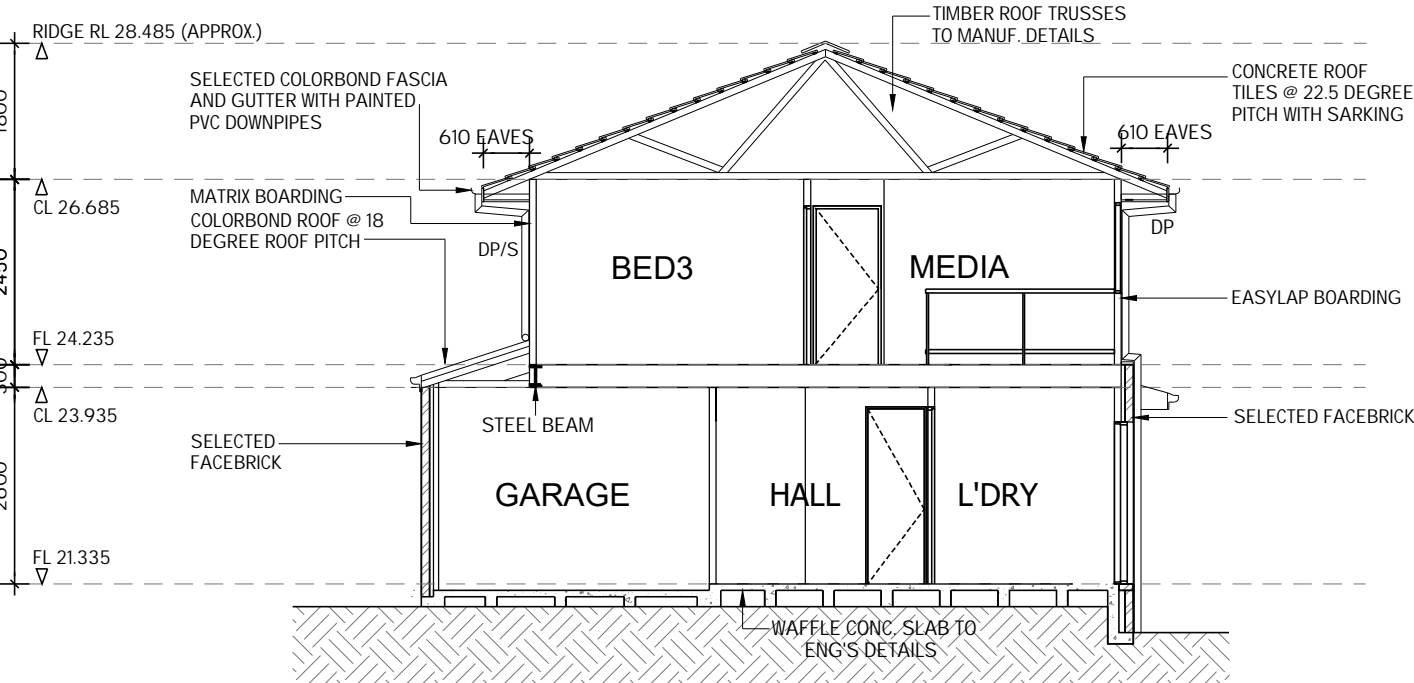
HOUSETYPE:
MODEL: BENHAM 24 MKII
FACADE: TREND
TYPE: GARAGE
SPECIFICATION: LUX

DRAWING TITLE:
ELEVATIONS 1 & 2

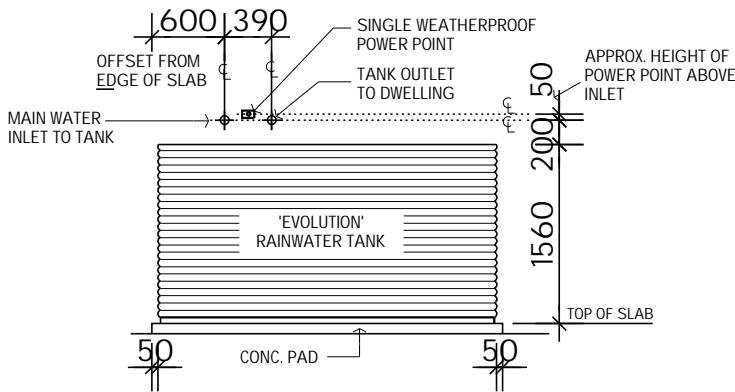
DRAWN BY: DTT	DATE DRAWN: 10.07.19	CHECKED BY: DTT	APPROVED FOR CONSTRUCTION:
COUNCIL AREA: PITTWATER		SCALE: 1:100	
JOB No: A008108	DRWG No.: 05	ISSUE: D	

INSULATION

- R3.5 INSULATION TO CEILING WITH ROOF OVER (EXCLUDING CEILINGS OVER GARAGE, PORCH, ALFRESCO & BALCONY)
- R2.0 INSULATION TO EXTERNAL WALL (INCLUDING WALLS BETWEEN GARAGE AND HOUSE)
- R2.0 SOUNDSSCREEN INSULATION TO INTERNAL WALL AS PER INDICATED ON PLAN
- R3.0 SOUNDSSCREEN INSULATION TO CEILING TO LOUNGE

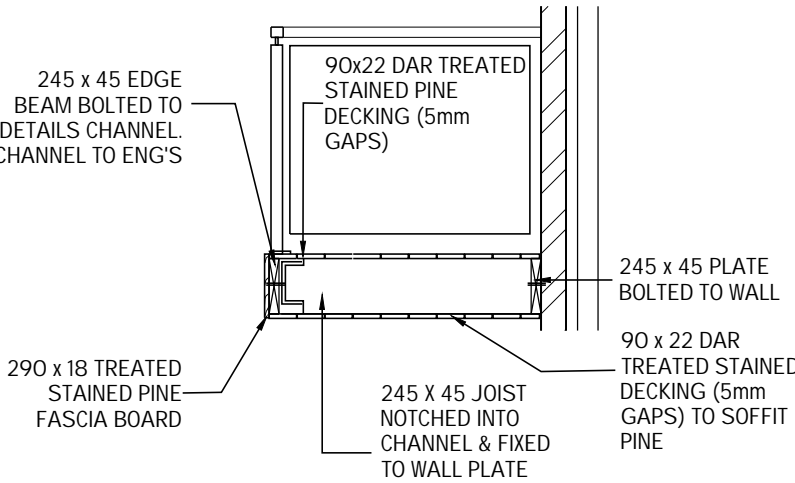


SECTION A - A



RAINWATER TANK DETAIL

NOT TO SCALE



DETAIL DECKING

NOT TO SCALE

BASIX COMMITMENTS

PROJECT DETAILS			RAINWATER	ENERGY	ARTIFICIAL LIGHTING
Site area	375	m2	Rainwater tank capacity of 3000L to collect rain runoff of at least 153sqm of the roof area & connected to all toilets, cold water taps connected to clothes washers & at least one outdoor tap on development.	ACTIVE COOLING/HEATING	The applicant must provide LED lighting to at least 4 of the bedrooms/study;the kitchen at least 4 of the living / dining rooms; all bathrooms/toilets, laundry & hallways
Roof area	153	m2		Provide fully ducted reverse cycle 3 phase air conditioner with EER rating of 2.5 - 3.0 for cooling	
number of bedrooms	4			Provide fully ducted reverse cycle 3 phase air conditioner with EER rating of 3.0-3.5 for heating	
Total area of vegetation (garden & lawn)	206	m2		Provide day/night zoning between living areas and bedrooms	
ABSA Certificate Number (if applicable)	0004266383			VENTILATION	COOKING (KITCHEN APPLIANCES)
Net conditioned floor area	173	m2	All showers with in the development are to have a minimum rating of 3 star showerheads	Exhaust systems kitchen, 1xbathroom with manual switch on/off ducted to roof & facade.	Install a gas cooktop and electric oven
Net unconditioned floor area	11	m2	Each toilet is to have a flushing system of no less than a 4 star rating	Natural Ventilation to laundry.	DESIGN ENHANCEMENTS
Cooling load (if applicable)	25	MJ/m2/pa	All taps in the kitchen and bathrooms are to have a minimum rating of 3 star	LIGHTING	Install an outdoor clothes drying line
Heating load (if applicable)	33	MJ/m2/pa	HOT WATER	Provide window(s) and/or skylight to 4 bathroom(s) & toilet(s)	INSULATION
			Gas Instantaneous hot water system with a performance of 6 stars	Provide window(s) and/or skylight to the kitchen	External wall R2.0 [including garage]
					Ceiling R3.5 [excluding garage]

NOTES:

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RAWSON HOMES

1 HOMEBUSH BAY DRIVE
BUILDING F, LEVEL 2, SUITE 1
RHODES NSW 2138
TELEPHONE: 02 8765 5500
FAX : 02 8765 8099
BUILDER'S LICENCE No. 33493C



CLIENT:
Mr ROBERT ALEXANDER MCDONALD BAXTER

SITE ADDRESS:
PROPOSED LOT 16, UNREGISTERED,
PROPOSED ROAD
WARRIEWOOD NSW 2102

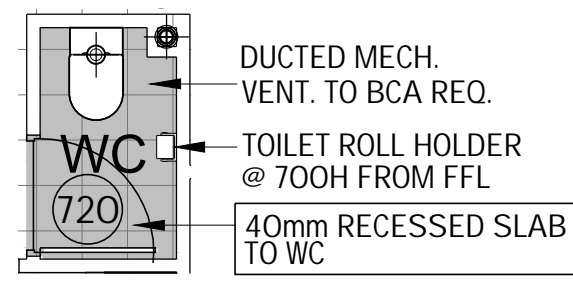
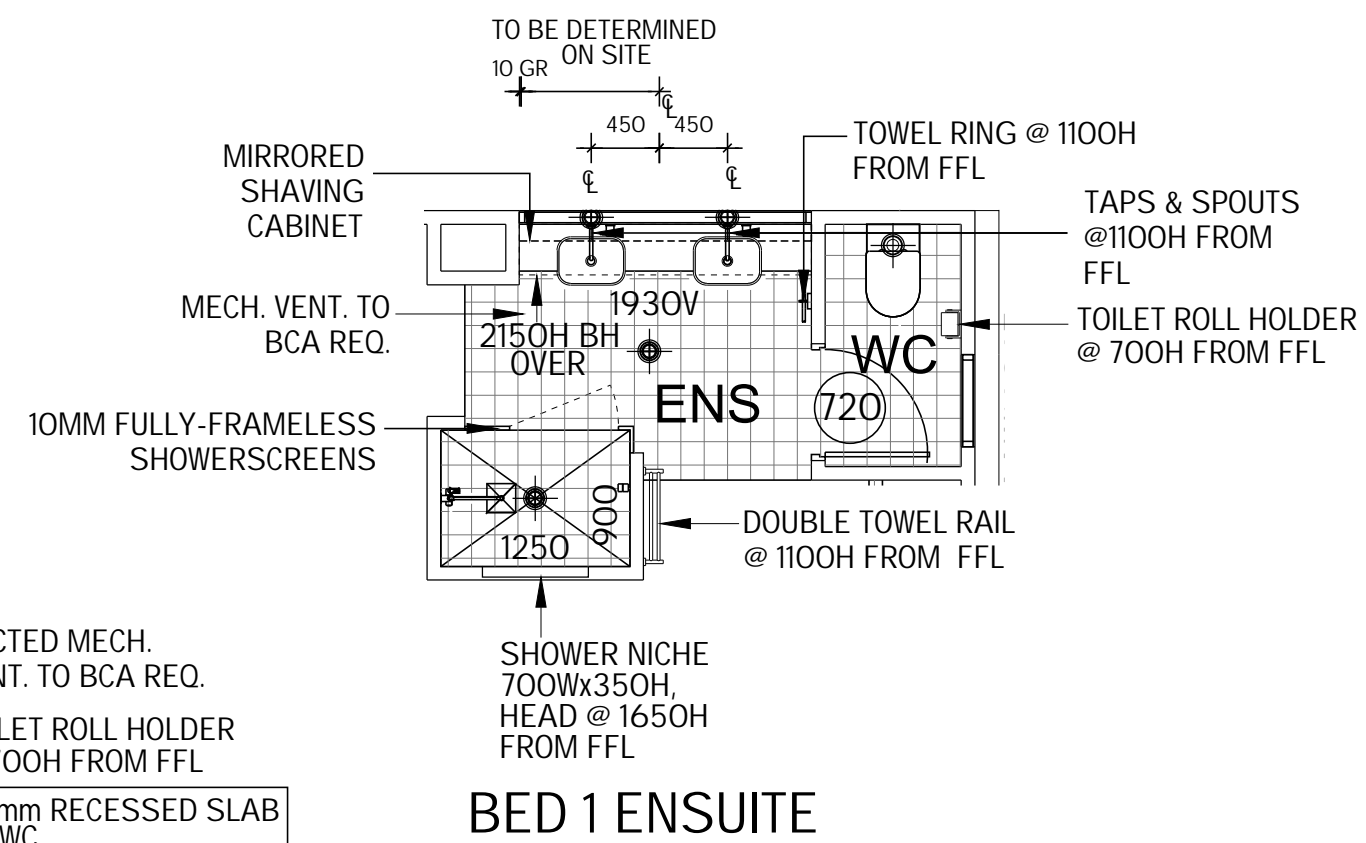
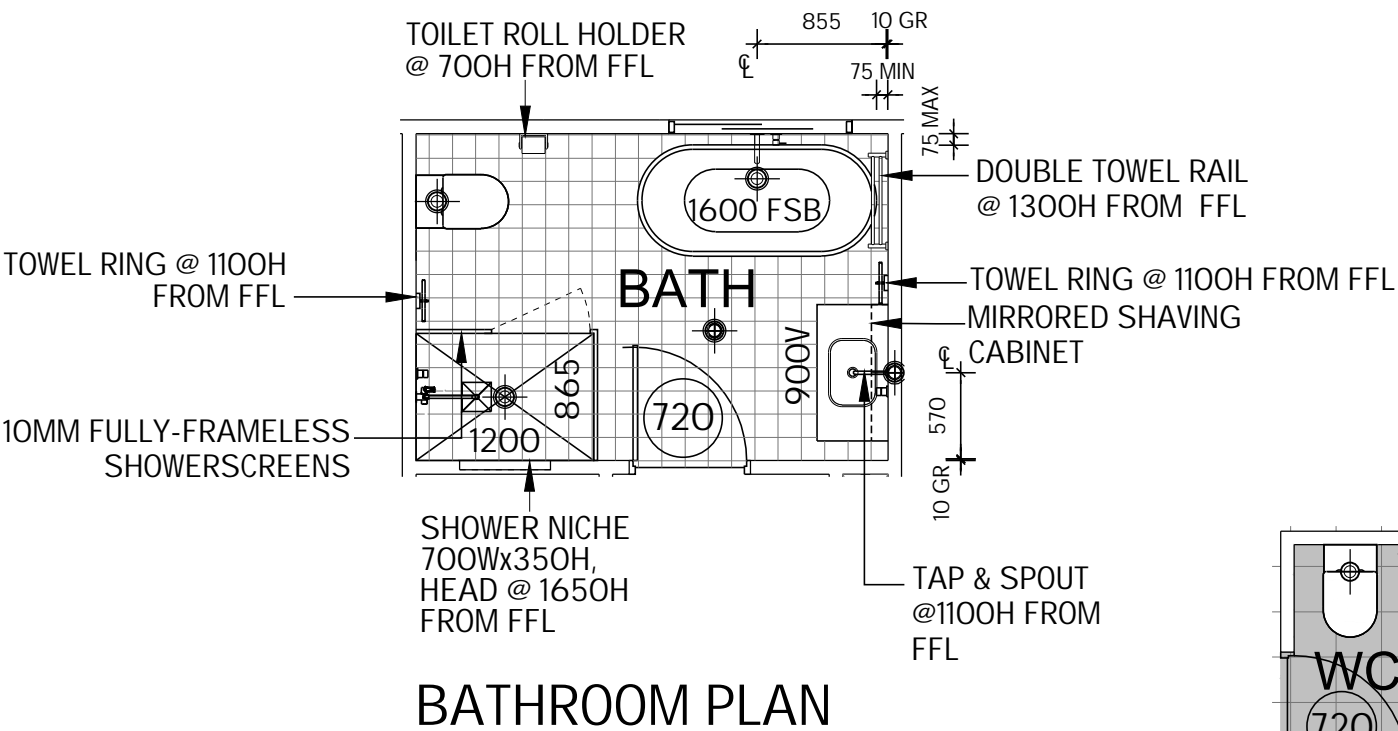
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MODEL: BENHAM 24 MKII
FACADE: TREND
TYPE: GARAGE
SPECIFICATION: LUX

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SECTION & BASIX

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COUNCIL AREA: PITTWATER		SCALE: 1:100	
JOB No: A008108	DRWG No.: 07	ISSUE: D	

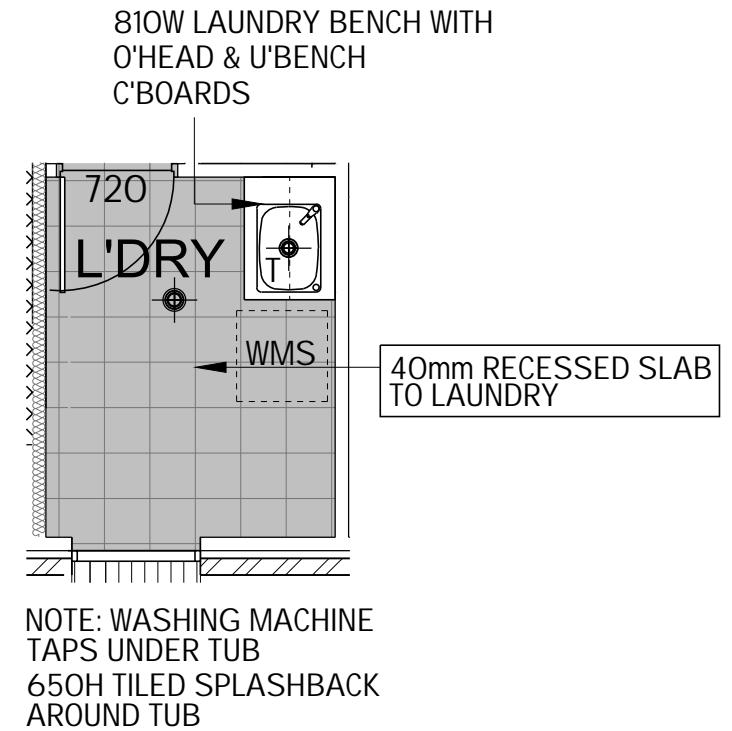
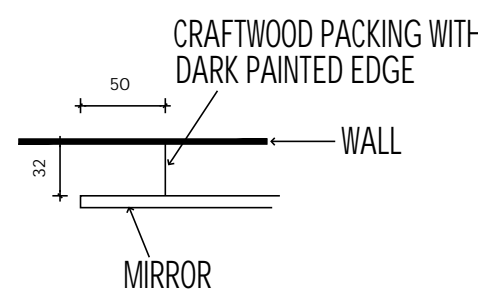
REFER TO ELBA DESIGN FOR DETAILS

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REFER TO TILE DIRECT QUOTE
SIGNED & DATED 10.04.18 FOR
DETAILS.

- NOTES:**
- PROVIDE 900mm HEAD HEIGHT TO BATHROOM & ENSUITE VANITY BENCHTOPS
 - PROVIDE FULL HEIGHT CERAMIC WALL TILING TO MAIN BATHROOM & BEDROOM 1 ENSUITE (EX. SEPARATE WC)
 - HEIGHT OF SHOWER SCREENS 2100mm
 - 1/2 SKIRTING TILE TO REMAINDER OF POWDER, LAUNDRY & WC
 - WALL MOUNTED SPOUT TO BATH & VANITY
 - SQ. EDGE POLISHED FLOATING MIRRORS MOUNTED ON 32mm BOARD, 130mm OFFSET FROM EDGE OF VANITY & HEAD HEIGHT @ 2020mm FROM FFL. SPLASHBACK BETWEEN VANITY & MIRROR
 - SMART FLOOR WASTES TO ALL WET AREAS
 - 1900 SHOWER HEAD FROM FFL TO UNDER SIDE OF SHOWER HEAD



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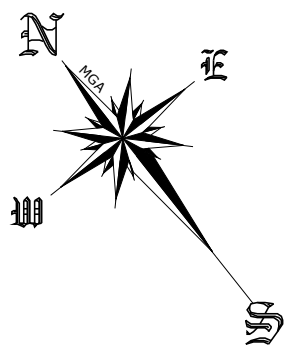
CLIENT:
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**PROPOSED LOT 16, UNREGISTERED,
PROPOSED ROAD
WARRIEWOOD NSW 2102**

HOUSETYPE:
MODEL: BENHAM 24 MKII
FACADE: TREND
TYPE: GARAGE
SPECIFICATION: LUX

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WET AREA DETAILS

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JOB No: A008108		DRWG No.: 08	ISSUE: D



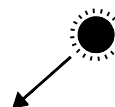
MORNING WINTER SUN



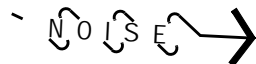
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(H): EASEMENT FOR ACCESS & MAINTENANCE 0.9 WIDE

MORNING SUMMER SUN



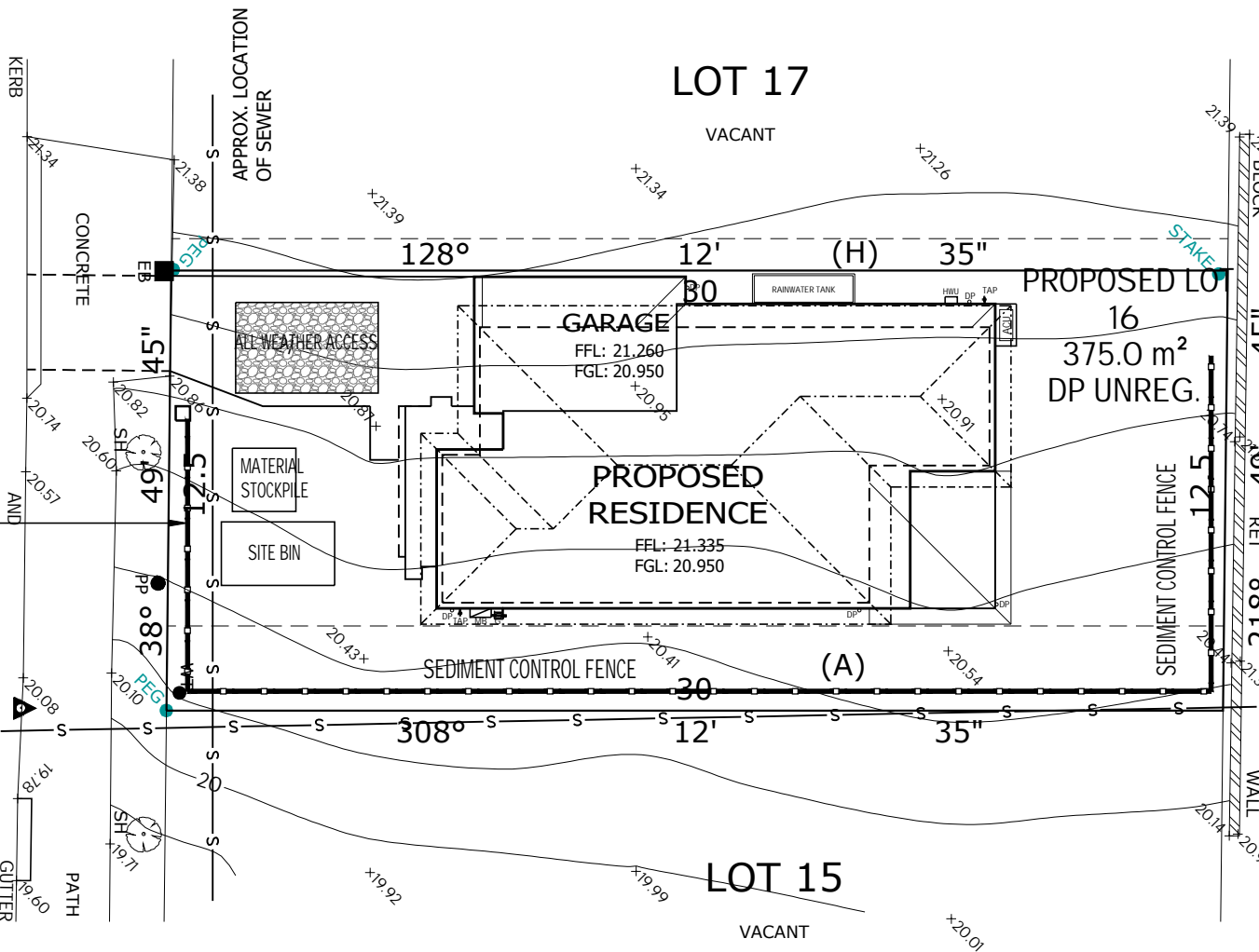
AFTERNOON WINTER SUN



SEDIMENT CONTROL FENCE

PROPOSED ROAD

BENCH MARK
BM 15 NAIL IN KERB
RL 20.00 (ASSUMED)

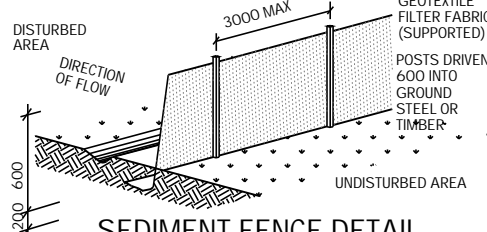


LOT 22
DP 270907

SEDIMENT CONTROL

INSTALL SEDIMENT CONTROL STRUCTURES IN LOCATIONS INDICATED ON THIS
DRAWING AND AS OTHERWISE REQUIRED TO CONTROL SEDIMENT DURING ALL
EXCAVATIONS AND WHILST AREAS OF THE SITE ARE EXPOSED TO EROSION.
REVIEW CONTROL MEASURES AND MAINTAIN STRUCTURES DURING
CONSTRUCTION.

IF ADDITIONAL MEASURES ARE REQUIRED FOR EROSION AND CONTROL OR BY
COUNCIL REQUIREMENTS, REFER TO "URBAN EROSION AND SEDIMENT
CONTROL" GUIDELINES PREPARED BY THE DEPARTMENT OF CONSERVATION
AND LAND MANAGEMENT.



SEDIMENT FENCE DETAIL

SUITABLE FOR DRAINAGE AREA OF 0.6HA MAX AND
SLOPE GRADIENT OF 1:2 MAX WITH LENGTH OF 60M MAX



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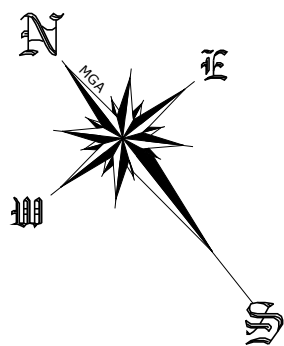
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HOUSETYPE:
MODEL: BENHAM 24 MKII
FACADE: TREND
TYPE: GARAGE
SPECIFICATION: LUX

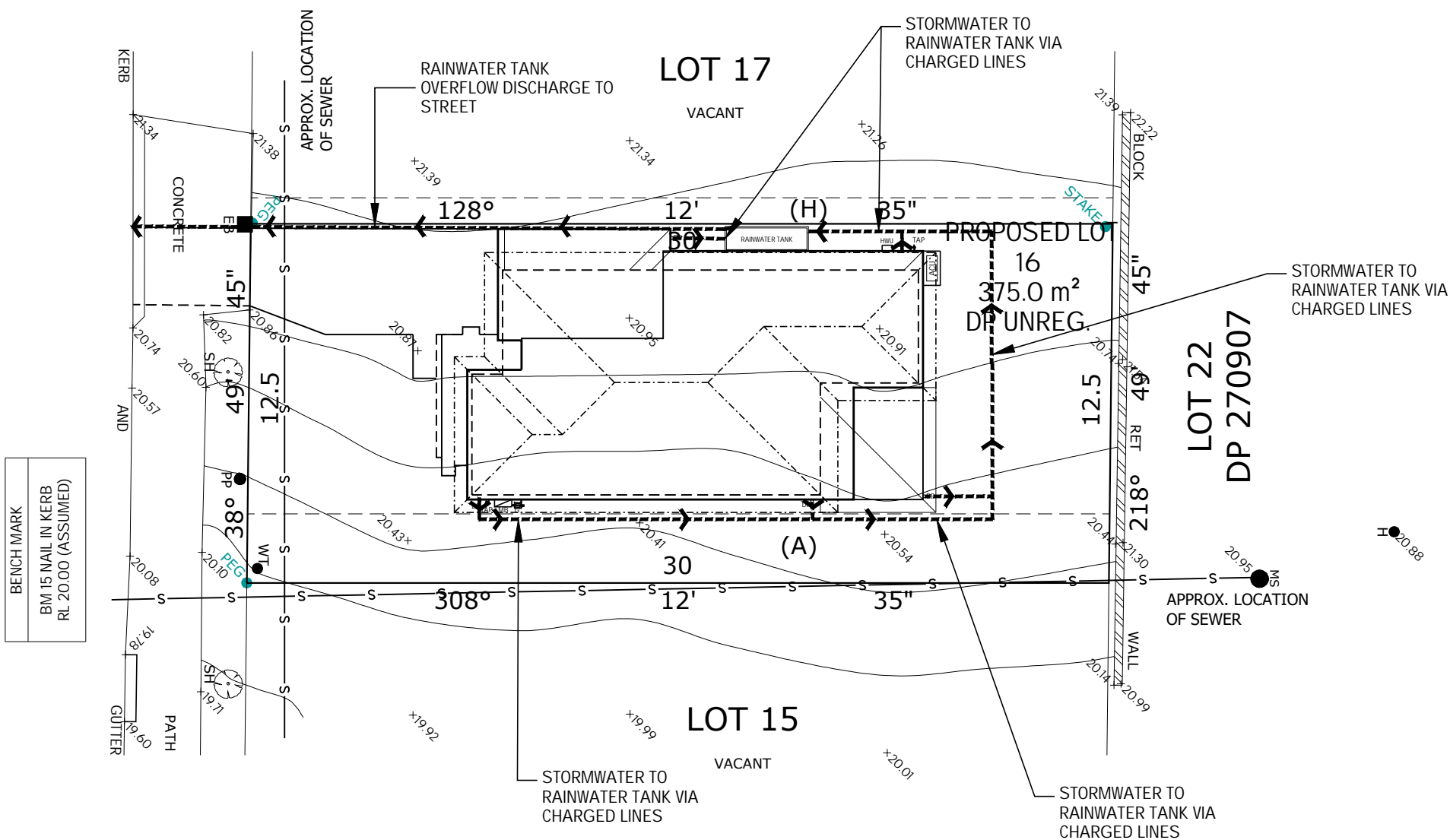
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SEDIMENT & SITE ANALYSIS

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DTT	10.07.19	DTT	
COUNCIL AREA:		SCALE:	
PITTWATER		1:200	
JOB No:	DRWG No.:	ISSUE:	
A008108	10	D	



(A): EASEMENT FOR SEWER PURPOSES 5 WIDE (VIDE 6390813)
(H): EASEMENT FOR ACCESS & MAINTENANCE 0.9 WIDE

PROPOSED ROAD



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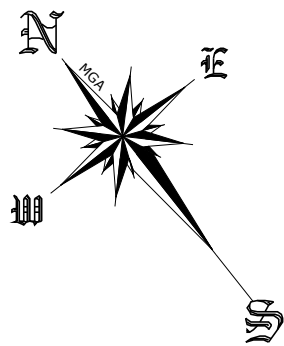
CLIENT:
Mr ROBERT ALEXANDER MCDONALD BAXTER

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PROPOSED LOT 16, UNREGISTERED,
PROPOSED ROAD
WARRIEWOOD NSW 2102

HOUSETYPE:
MODEL: BENHAM 24 MKII
FACADE: TREND
TYPE: GARAGE
SPECIFICATION: LUX

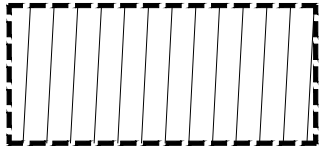
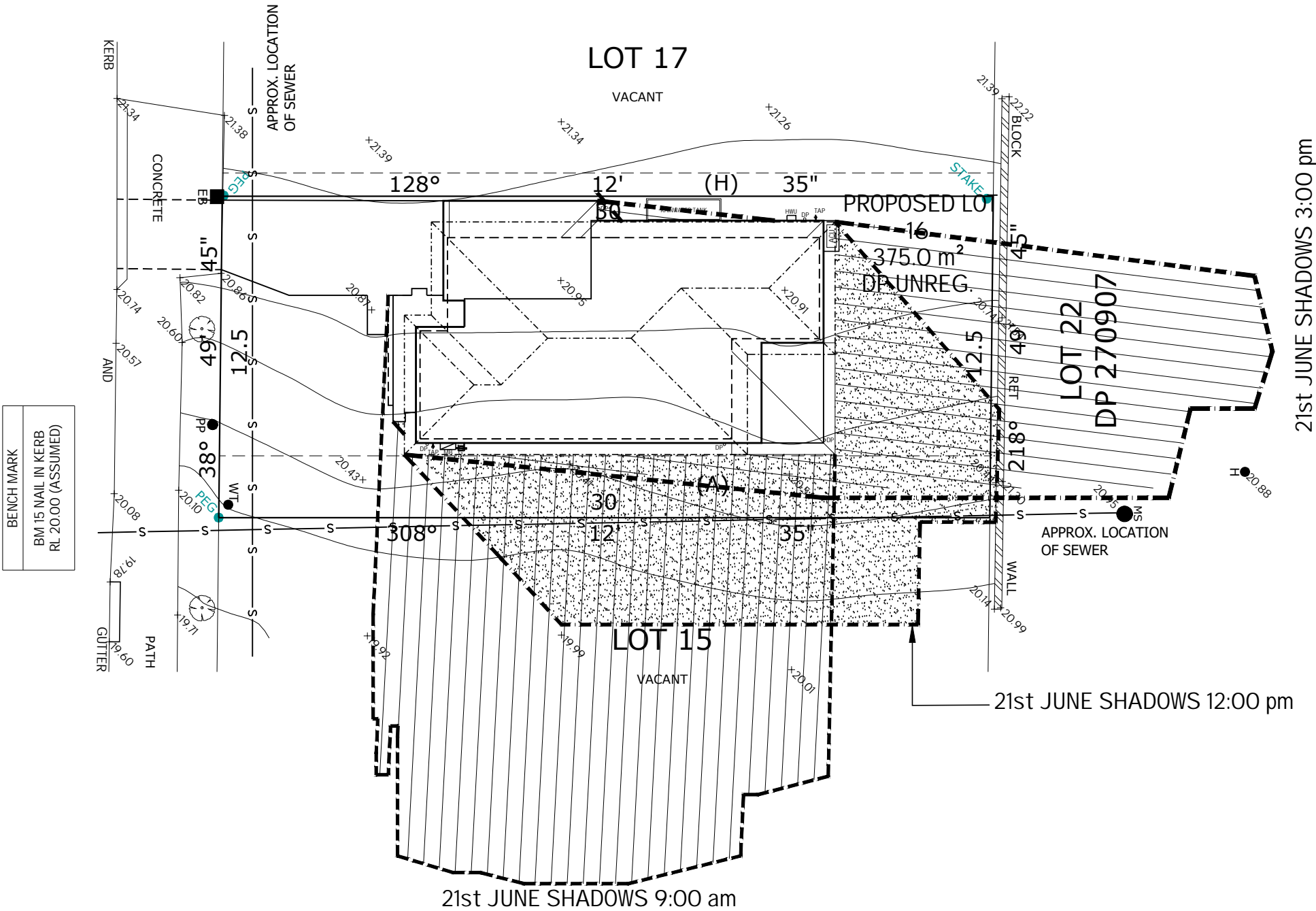
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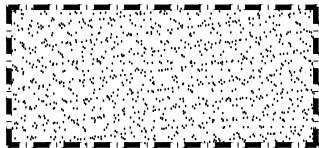


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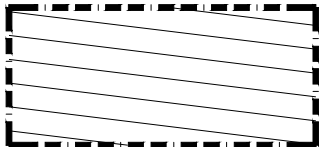
PROPOSED ROAD



21st JUNE SHADOWS 9:00 am



21st JUNE SHADOWS 12:00 pm



21st JUNE SHADOWS 3:00 pm

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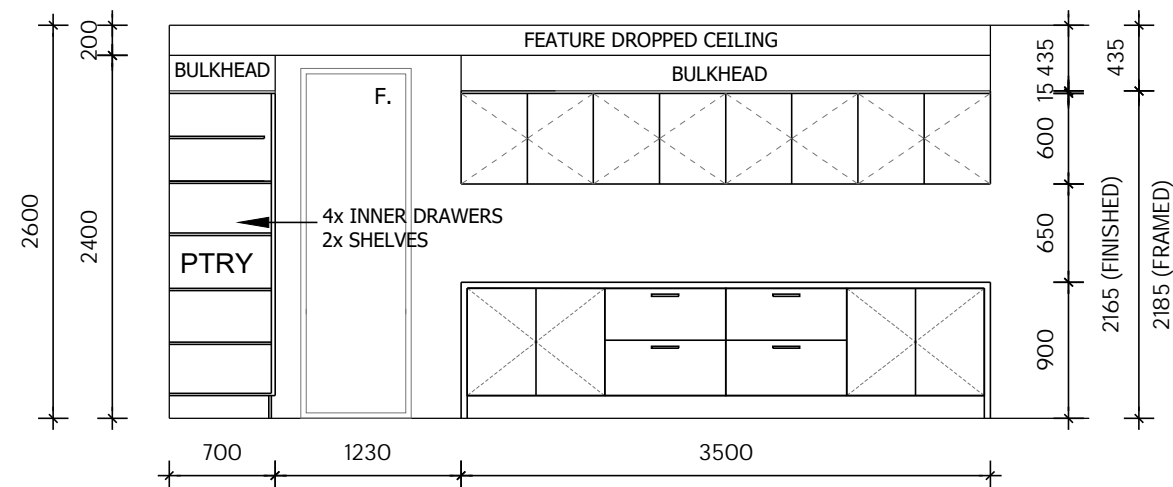
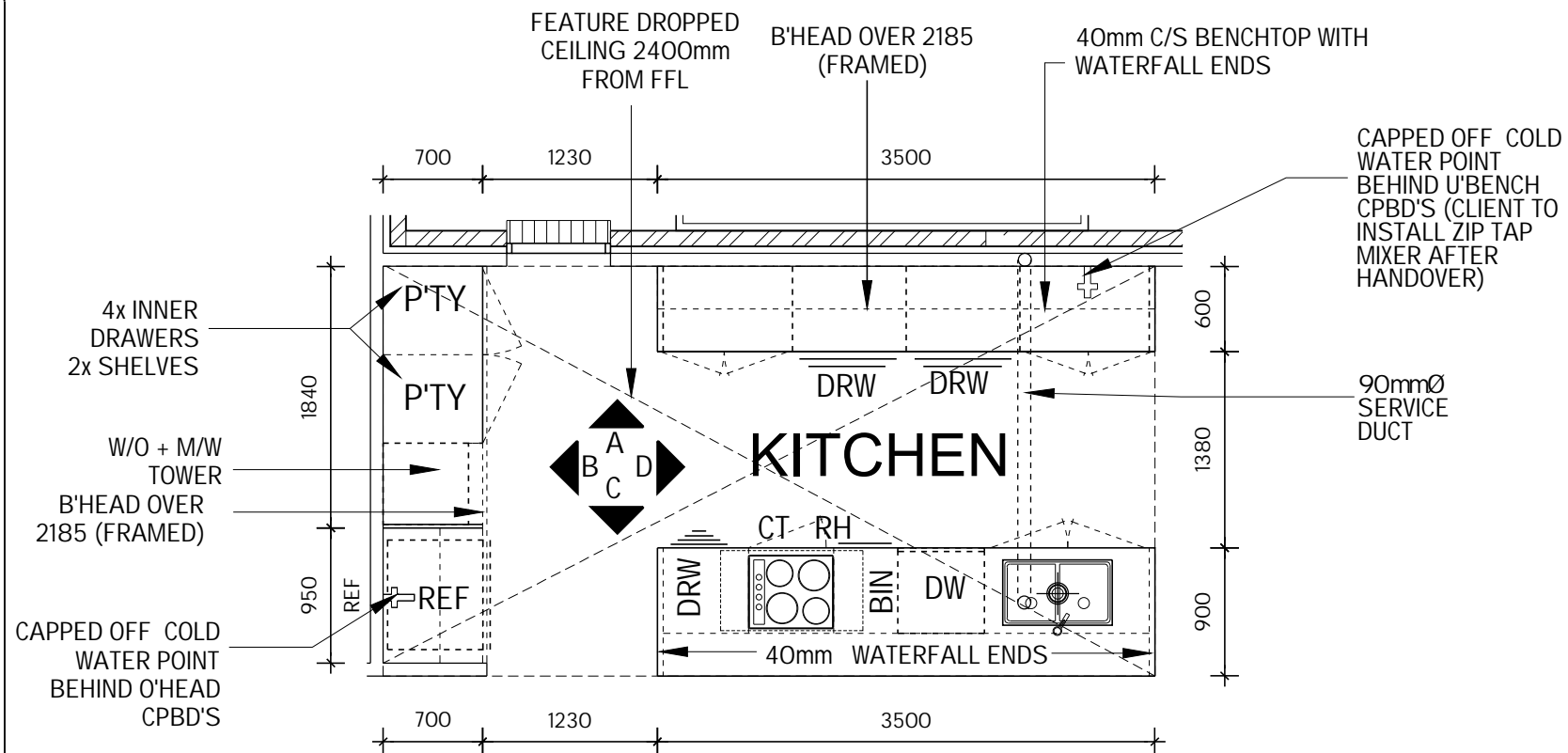
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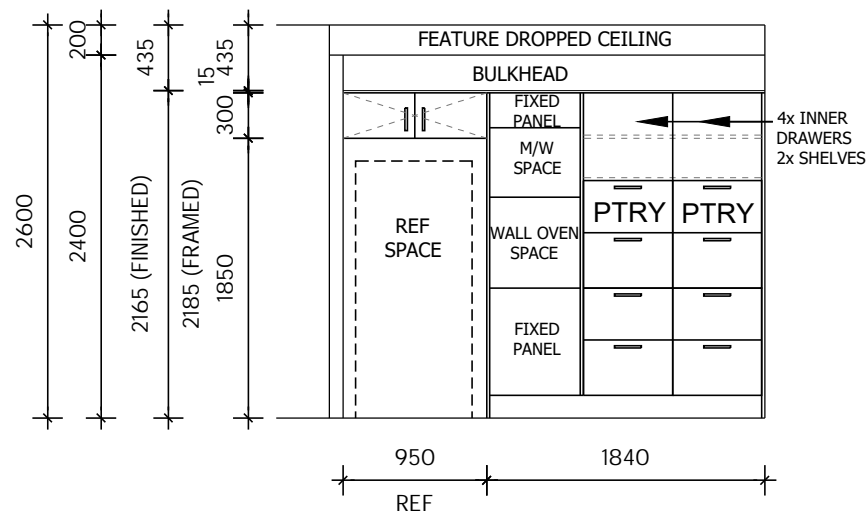
HOUSETYPE:
MODEL: BENHAM 24 MKII
FACADE: TREND
TYPE: GARAGE
SPECIFICATION: LUX

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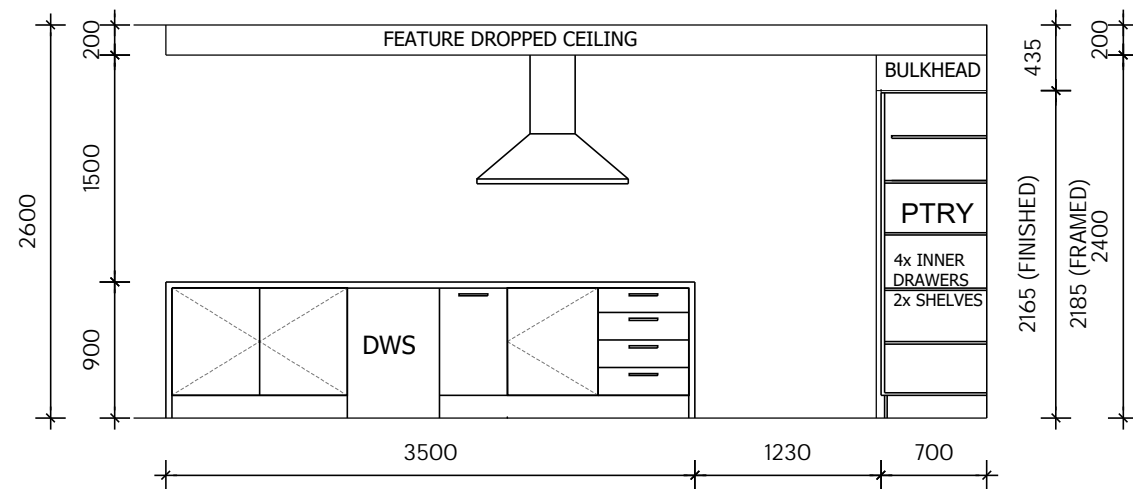
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JOB No: A008108	DRWG No.: 12	ISSUE: D	



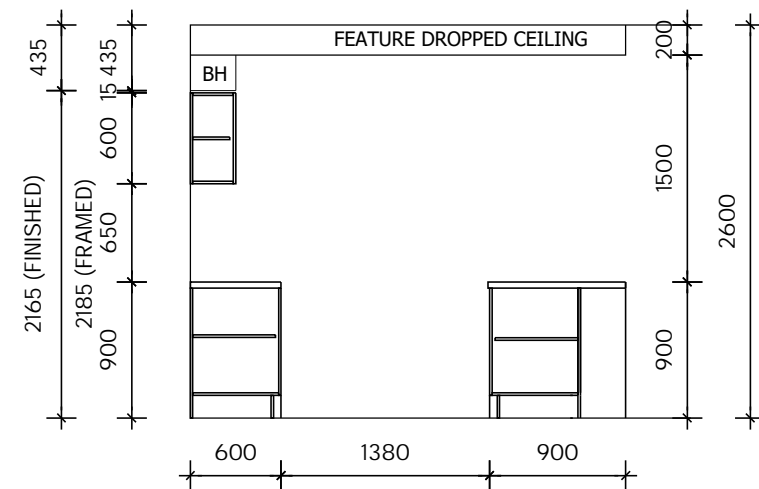
ELEVATION A



ELEVATION B



ELEVATION C



ELEVATION D

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SITE ADDRESS:

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PROPOSED ROAD
WARRIEWOOD NSW 2102

HOUSETYPE:

MODEL: BENHAM 24 MKII
FACADE: TREND
TYPE: GARAGE
SPECIFICATION: LUX

DRAWING TITLE:

KITCHEN PLANS

DRAWN BY:

DTT

DATE DRAWN:

10.07.19

CHECKED BY:

DTT

APPROVED FOR CONSTRUCTION:

COUNCIL AREA:

PITTWATER

SCALE:

1:50

JOB No:

A008108

DRWG No.:

KD

ISSUE:

D