

Proposed Residential Development at: 20 Robert Street , Penrith



BASIX Commitments

Water Commitments:

- *Fixtures**
- Must install 3 Star rating showerheads in all showers. (>4.5 but <=6L/min).
- Must install 4 Star rating toilet flushing system in each toilet.
- Must install 5 Star rating taps in each kitchen.
- Must install 5 Star rating taps in each bathroom.

Energy Commitments:

- *Hotwater**
- Must install a gas instantaneous 6 star.
- *Cooling/ Heating System**
- Must install 5 Star (new rating) rated 1-phase air conditioning or higher to the living areas of each dwelling.
- *Ventilated fridge space - Yes**
- *Ventilation**
- Must install ventilation systems in:
 - Bathroom: individual fan, ducted to facade or roof; Operation control: manual switch on/off.
 - Kitchen: individual fan, ducted to facade or roof; Operation control: manual switch on/off
 - Laundry: individual fan, ducted to facade or roof; Operation control: manual switch on/off

*Fixtures

Dishwasher - 4.5*, Clothes dryer 6*

*Lighting

- Must provide artificial lighting in each Kitchen, all Bathrooms/ toilets, each Laundry, all Hallways.

*Other

- Must install gas cooktop and electric oven in the kitchen of all dwellings.
- Indoor clothes drying line

Common Areas

Water Commitments:

- *Fixtures**
- Must install 3 Star rating toilet flushing system in any common toilet.
- Must install 3 Star rating taps.

Energy Commitments:

- *Lighting**
- Must install lighting in:
 - Lift cars : compact fluorescent ; Efficiency measure: connected to lift call button.
 - Hallway/ Lobbies : compact fluorescent; Efficiency measure: daylight sensor and motion sensor.
- *Central energy system**
- Lift : Must install gearless traction with VVVF motor : Number of Levels (Including basement) :5
- Must install a central hot water system solar gas boosted

BASIX Commitments- Common Areas (Non-Building Specific)

Water Commitments:

- *Fixtures**
- Must install 3 Star rating toilet flushing system in any common toilet.
- Must install 3 Star rating taps.

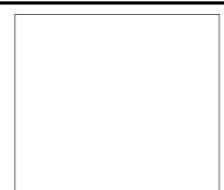
Energy Commitments:

- *Ventilation**
- Must install ventilation in:
 - Basement 1- All Buildings: Ventilation (supply + exhaust); Efficiency measure: Carbon monoxide monitor + VSD fan.
 - Plant or Service Room- No Mechanical Ventilation.
- *Lighting**
- Must install lighting in:
 - Basement : compact fluorescent; Efficiency measure: daylight sensors and motion sensor.
 - Garbage rooms : compact fluorescent; Efficiency measure: manual on / manual off.
 - Plant or Service room: compact fluorescent; Efficiency measure: manual on / manual off.

Residential Flat Buildings DESIGN FACTS		
Site Area		1400m ²
	Required/allowed	Provided
Total Built-up Area	N/A	1830 m ²
FSR	N/A	1.3:1
Permissible Height	15m	13.5 (Parapet) 14.6 (Lift over-run)
Front Street Setback	5.5 m	Building : 5.5 m Balcony : 5.0 m
Rear Setback	6 m	6 m
Side Setback	6m	6m
Car Spaces Residential	1 space / 1 Bed 1 spaces / 2 Bed 2 spaces / 3 Bed 21	21
Car Spaces Visitor	1 space / 5 Units	4
Car Spaces (Total)	25	25
Car wash bay	1	1
Communal Open Space	10% of the Landscape Area= 49 m ²	250 m ²
Total Landscape Area	35% Site area = 490m ²	527m ²
Deep Soil		388m ²
Unit Breakdown		3 x 1 bedroom 16 x 2 bedroom 1 x 3 bedroom
Total Unit		20 units

Sheet List	
Sheet Number	Sheet Name
DA 000	Cover Page
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DA 203	Ground Floor Plan
DA 204	Level 1 / 2 Plan
DA 205	Level 3 Plan
DA 206	Roof Plan
DA 300	Exterior Elevations 1/2
DA 301	Exterior Elevations 2/2
DA 302	Streetscape
DA 303	Sections
DA 600	SolarAccess & Cross Ventilation
DA 601	Shadow Diagrams
DA 700	ADG Key Compliance Schedule
UA 100	Site Analysis 1 of 2
UA 101	Site Analysis 2 of 2
UA 102	Average Front Setback

REVISIONS			
ISSUE	DESCRIPTION	DATE	BY
A	Issue for DA submission	7.9.18	MT



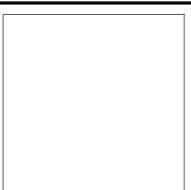
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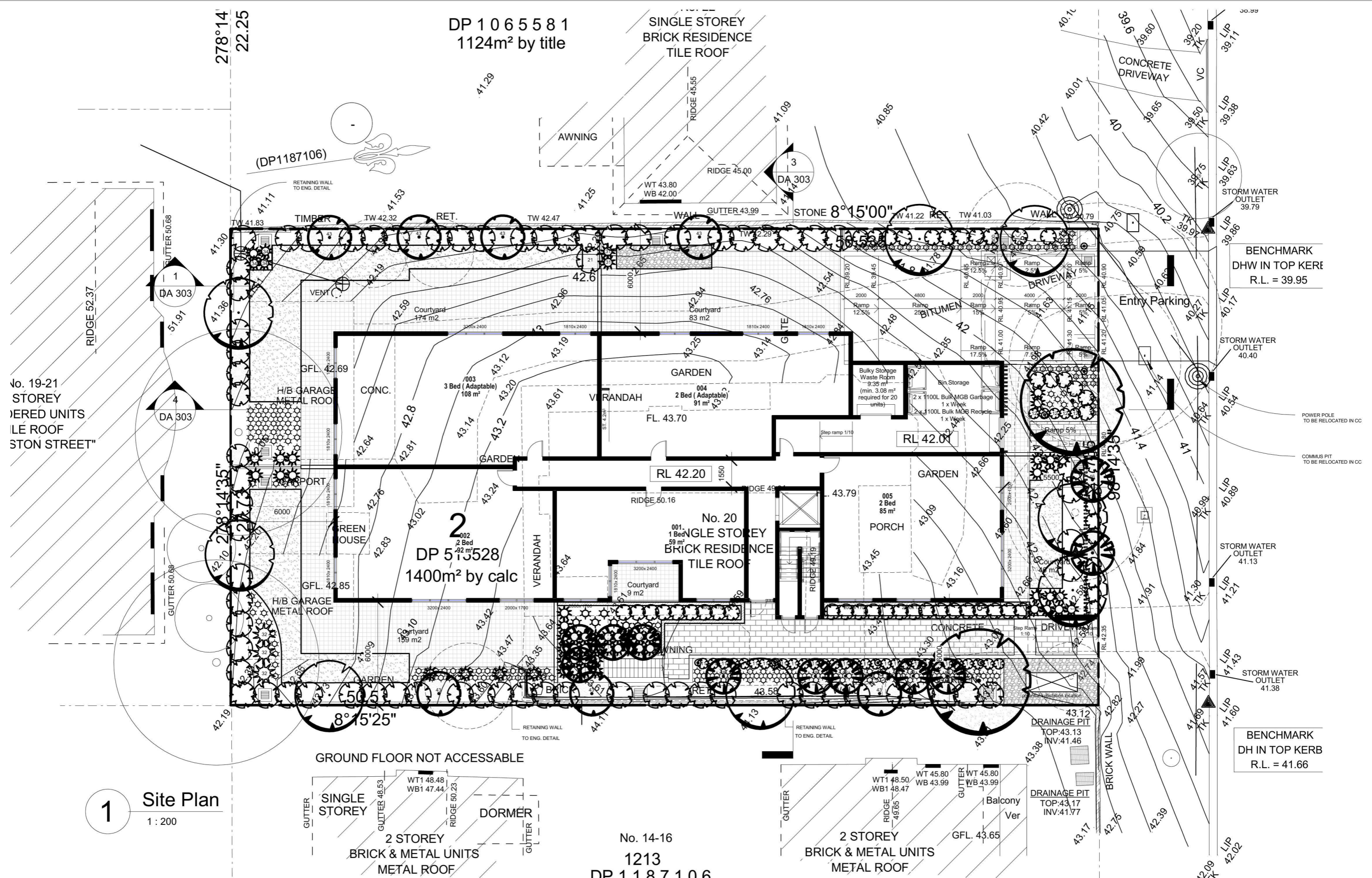
SHEET TITLE: Cover Page	
SHEET NO:	DA 000
SCALE:	1 : 1

DRAWN BY: MT
CHECKED BY: FG

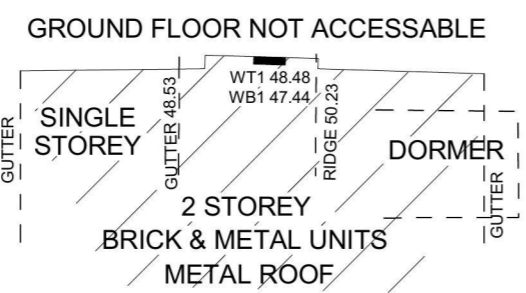
PROJECT DETAIL: Proposed Residential Development at: 20 Robert Street, Penrith	
JOB NO: 170869	DATE: Apr 2017
LODGE AT: Penrith City Council	

DP 1065581
1124m² by title

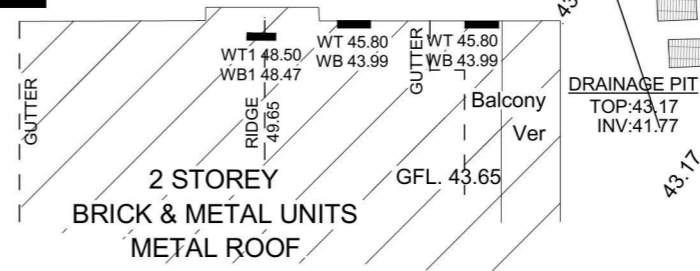
SINGLE STOREY
BRICK RESIDENCE
TILE ROOF



1 Site Plan
1 : 200



No. 14-16
1213
DP 1187106



REVISIONS			
ISSUE	DESCRIPTION	DATE	BY
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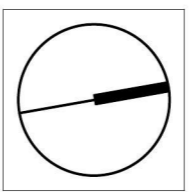
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SHEET TITLE:
Site Plan

SHEET NO: DA 200

SCALE: 1 : 200

DRAWN BY:
MT

CHECKED BY:
FG

PROJECT DETAIL:
Proposed Residential Development
at: 20 Robert Street, Penrith

JOB NO: 170869 DATE: Apr 2017

LODGE AT: Penrith City Council

BASIX Commitments

Water Commitments:

***Fixtures**

- Must install 3 Star rating showerheads in all showers. (>4.5 but <=6L/min).
- Must install 4 Star rating toilet flushing system in each toilet.
- Must install 5 Star rating taps in each kitchen.
- Must install 5 Star rating taps in each bathroom.

Energy Commitments:

***Hotwater**

- Must install a gas instantaneous 6 star.

***Cooling/ Heating System**

- Must install 5 Star (new rating) rated 1-phase air conditioning or higher to the living areas of each dwelling.

***Ventilated fridge space - Yes**

***Ventilation**

Must install ventilation systems in:

- Bathroom: individual fan, ducted to facade or roof; Operation control: manual switch on/off.
- Kitchen: individual fan, ducted to facade or roof; Operation control: manual switch on/off
- Laundry: individual fan, ducted to facade or roof; Operation control: manual switch on/off

***Fixtures**

Dishwasher - 4.5*, Clothes dryer 6*

***Lighting**

- Must provide artificial lighting in each Kitchen, all Bathrooms/ toilets, each Laundry, all Hallways.

***Other**

- Must install gas cooktop and electric oven in the kitchen of all dwellings.
- Indoor clothes drying line

Common Areas

Water Commitments:

***Fixtures**

- Must install 3 Star rating toilet flushing system in any common toilet.
- Must install 3 Star rating taps.

Energy Commitments:

***Lighting**

Must install lighting in:

- Lift cars : compact fluorescent ; Efficiency measure: connected to lift call button.
- Hallway/ Lobbies : compact fluorescent; Efficiency measure: daylight sensor and motion sensor.

***Central energy system**

- Lift : Must install gearless traction with VVVF motor : Number of Levels (Including basement) :5
- Must install a central hot water system solar gas boosted

BASIX Commitments- Common Areas (Non-Building Specific)

Water Commitments:

***Fixtures**

- Must install 3 Star rating toilet flushing system in any common toilet.
- Must install 3 Star rating taps.

Energy Commitments:

***Ventilation**

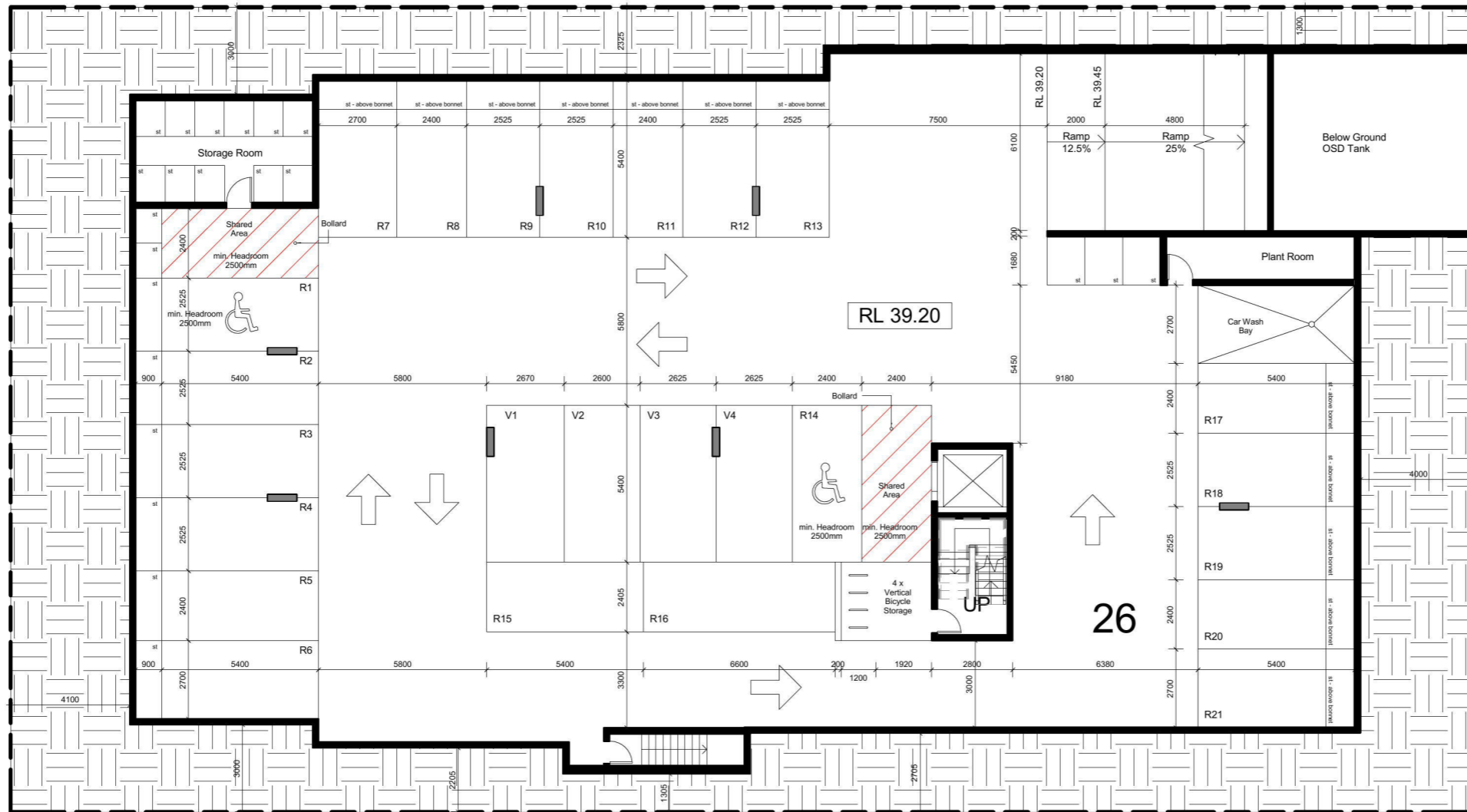
Must install ventilation in:

- Basement 1- All Buildings: Ventilation (supply + exhaust); Efficiency measure: Carbon monoxide monitor + VSD fan.
- Plant or Service Room- No Mechanical Ventilation.

***Lighting**

Must install lighting in:

- Basement : compact fluorescent; Efficiency measure: daylight sensors and motion sensor.
- Garbage rooms : compact fluorescent; Efficiency measure: manual on / manual off.
- Plant or Service room: compact fluorescent; Efficiency measure: manual on / manual off.



1 Basement 1 Plan
1 : 200

All over-bonnet storage to comply with Fig. 2.7 of AS2890.6

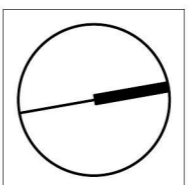
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SHEET TITLE: Basement 1 Plan	
SHEET NO:	DA 202
SCALE:	As indicated

DRAWN BY: MT
CHECKED BY: FG

PROJECT DETAIL: Proposed Residential Development at: 20 Robert Street, Penrith	
JOB NO: 170869	DATE: Apr 2017
LODGE AT: Penrith City Council	

BASIX Commitments

Water Commitments:

***Fixtures**

- Must install 3 Star rating showerheads in all showers. (>4.5 but <=6L/min).
- Must install 4 Star rating toilet flushing system in each toilet.
- Must install 5 Star rating taps in each kitchen.
- Must install 5 Star rating taps in each bathroom.

Energy Commitments:

***Hotwater**

- Must install a gas instantaneous 6 star.

***Cooling/ Heating System**

- Must install 5 Star (new rating) rated 1-phase air conditioning or higher to the living areas of each dwelling.

***Ventilated fridge space - Yes**

***Ventilation**

Must install ventilation systems in:

- Bathroom: individual fan, ducted to facade or roof; Operation control: manual switch on/off.
- Kitchen: individual fan, ducted to facade or roof; Operation control: manual switch on/off
- Laundry: individual fan, ducted to facade or roof; Operation control: manual switch on/off

***Fixtures**

Dishwasher - 4.5*, Clothes dryer 6*

***Lighting**

- Must provide artificial lighting in each Kitchen, all Bathrooms/ toilets, each Laundry, all Hallways.

***Other**

- Must install gas cooktop and electric oven in the kitchen of all dwellings.
- Indoor clothes drying line

Common Areas

Water Commitments:

***Fixtures**

- Must install 3 Star rating toilet flushing system in any common toilet.
- Must install 3 Star rating taps.

Energy Commitments:

***Lighting**

Must install lighting in:

- Lift cars : compact fluorescent ; Efficiency measure: connected to lift call button.
- Hallway/ Lobbies : compact fluorescent; Efficiency measure: daylight sensor and motion sensor.

***Central energy system**

- Lift : Must install gearless traction with VVVF motor : Number of Levels (Including basement) :5
- Must install a central hot water system solar gas boosted

BASIX Commitments- Common Areas (Non-Building Specific)

Water Commitments:

***Fixtures**

- Must install 3 Star rating toilet flushing system in any common toilet.
- Must install 3 Star rating taps.

Energy Commitments:

***Ventilation**

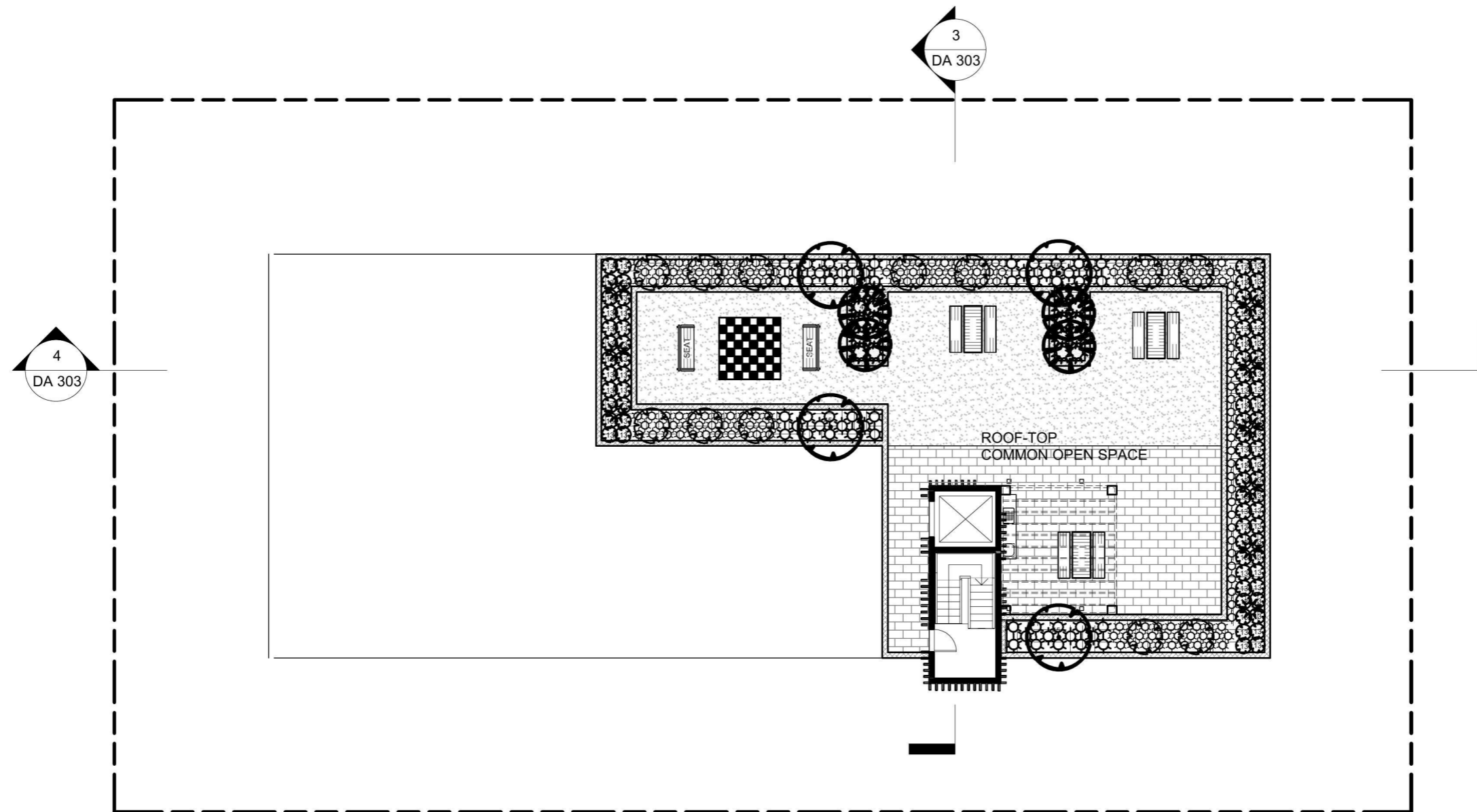
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- Basement 1- All Buildings: Ventilation (supply + exhaust); Efficiency measure: Carbon monoxide monitor + VSD fan.
- Plant or Service Room- No Mechanical Ventilation.

***Lighting**

Must install lighting in:

- Basement : compact fluorescent; Efficiency measure: daylight sensors and motion sensor.
- Garbage rooms : compact fluorescent; Efficiency measure: manual on / manual off.
- Plant or Service room: compact fluorescent; Efficiency measure: manual on / manual off.

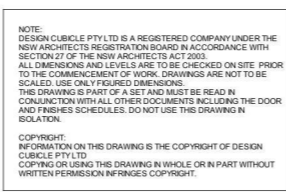


1 Roof Plan
1 : 200

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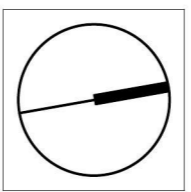
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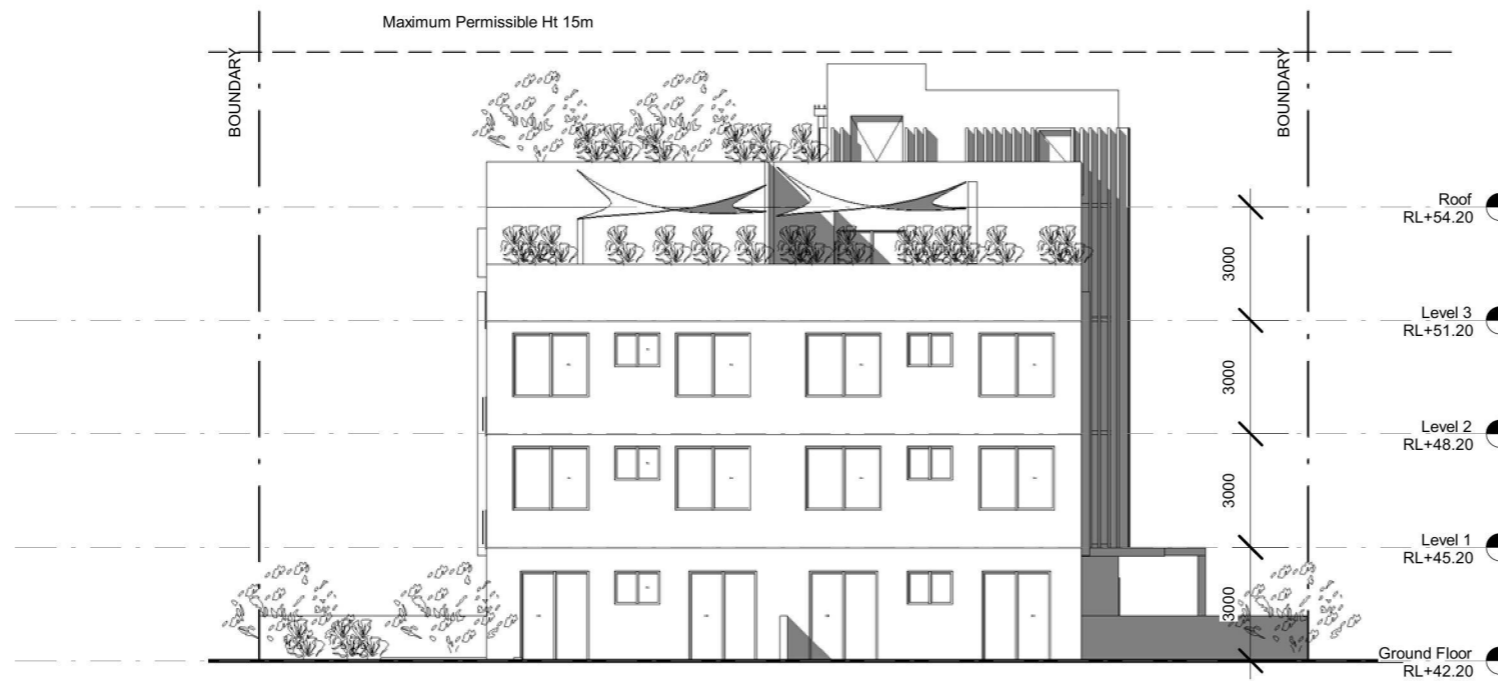
SHEET TITLE: Roof Plan	
SHEET NO:	DA 206
SCALE:	As indicated

DRAWN BY: MT
CHECKED BY: FG

PROJECT DETAIL: Proposed Residential Development at: 20 Robert Street, Penrith	
JOB NO: 170869	DATE: Apr 2017
LODGE AT: Penrith City Council	



1 North Elevation
1 : 200



2 South Elevation
1 : 200

BASIX Commitments

Water Commitments:

***Fixtures**

- Must install 3 Star rating showerheads in all showers. (>4.5 but <=6L/min).
- Must install 4 Star rating toilet flushing system in each toilet.
- Must install 5 Star rating taps in each kitchen.
- Must install 5 Star rating taps in each bathroom.

Energy Commitments:

***Hotwater**

- Must install a gas instantaneous 6 star.

***Cooling/ Heating System**

- Must install 5 Star (new rating) rated 1-phase air conditioning or higher to the living areas of each dwelling.

***Ventilated fridge space - Yes**

***Ventilation**

Must install ventilation systems in:

- Bathroom: individual fan, ducted to facade or roof; Operation control: manual switch on/off.
- Kitchen: individual fan, ducted to facade or roof; Operation control: manual switch on/off
- Laundry: individual fan, ducted to facade or roof; Operation control: manual switch on/off

***Fixtures**

Dishwasher - 4.5*, Clothes dryer 6*

***Lighting**

- Must provide artificial lighting in each Kitchen, all Bathrooms/ toilets, each Laundry, all Hallways.

***Other**

- Must install gas cooktop and electric oven in the kitchen of all dwellings.
- Indoor clothes drying line

Common Areas

Water Commitments:

***Fixtures**

- Must install 3 Star rating toilet flushing system in any common toilet.
- Must install 3 Star rating taps.

Energy Commitments:

***Lighting**

Must install lighting in:

- Lift cars : compact fluorescent ; Efficiency measure: connected to lift call button.
- Hallway/ Lobbies : compact fluorescent; Efficiency measure: daylight sensor and motion sensor.

***Central energy system**

- Lift : Must install gearless traction with VVVF motor : Number of Levels (Including basement) :5
- Must install a central hot water system solar gas boosted

BASIX Commitments- Common Areas (Non-Building Specific)

Water Commitments:

***Fixtures**

- Must install 3 Star rating toilet flushing system in any common toilet.
- Must install 3 Star rating taps.

Energy Commitments:

***Ventilation**

Must install ventilation in:

- Basement 1- All Buildings: Ventilation (supply + exhaust); Efficiency measure: Carbon monoxide monitor + VSD fan.
- Plant or Service Room- No Mechanical Ventilation.

***Lighting**

Must install lighting in:

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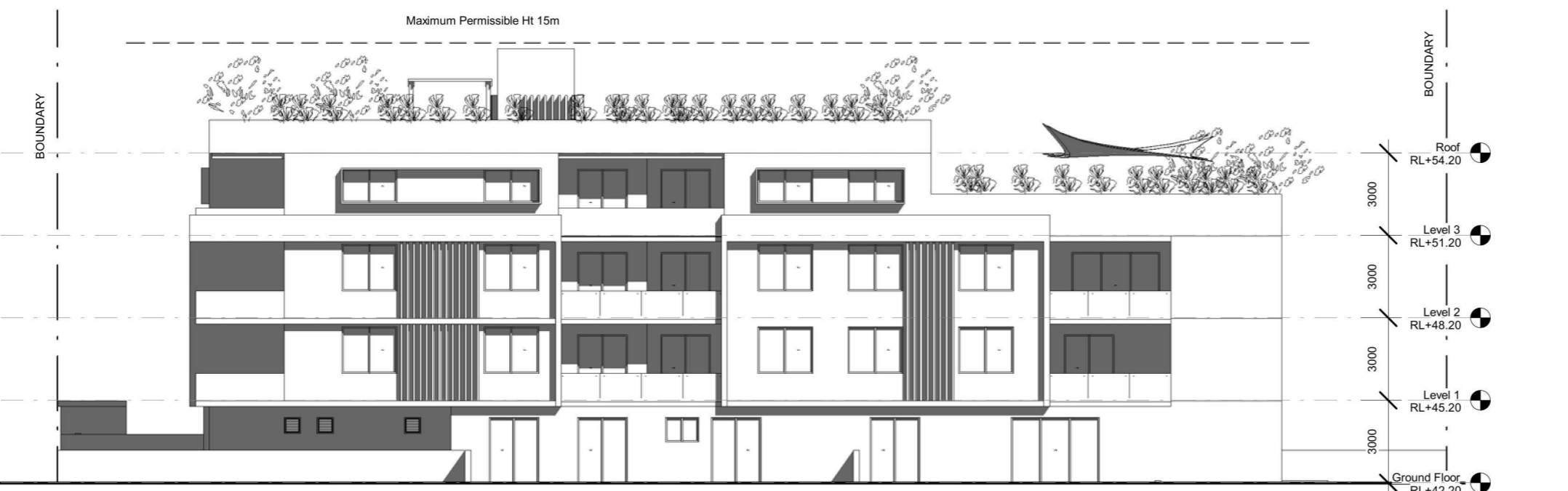
SHEET TITLE: Exterior Elevations 1/2	
SHEET NO:	DA 300
SCALE:	As indicated

DRAWN BY: MT
CHECKED BY: FG

PROJECT DETAIL: Proposed Residential Development at: 20 Robert Street, Penrith	
JOB NO: 170869	DATE: Apr 2017
LODGE AT: Penrith City Council	



1 East Elevation
1 : 200



2 West Elevation
1 : 200

BASIX Commitments

- Water Commitments:**
- *Fixtures**
 - Must install 3 Star rating showerheads in all showers. (>4.5 but <=6L/min).
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 - Must install 5 Star rating taps in each bathroom.
- Energy Commitments:**
- *Hotwater**
 - Must install a gas instantaneous 6 star.
 - *Cooling/ Heating System**
 - Must install 5 Star (new rating) rated 1-phase air conditioning or higher to the living areas of each dwelling.
 - *Ventilated fridge space - Yes**
 - *Ventilation**

Must install ventilation systems in:

 - Bathroom: individual fan, ducted to facade or roof; Operation control: manual switch on/off.
 - Kitchen: individual fan, ducted to facade or roof; Operation control: manual switch on/off
 - Laundry: individual fan, ducted to facade or roof; Operation control: manual switch on/off
- *Fixtures**
- Dishwasher - 4.5*, Clothes dryer 6*
- *Lighting**
- Must provide artificial lighting in each Kitchen, all Bathrooms/ toilets, each Laundry, all Hallways.
- *Other**
- Must install gas cooktop and electric oven in the kitchen of all dwellings.
 - Indoor clothes drying line
- Common Areas**
- Water Commitments:**
- *Fixtures**
 - Must install 3 Star rating toilet flushing system in any common toilet.
 - Must install 3 Star rating taps.
- Energy Commitments:**
- *Lighting**

Must install lighting in:

 - Lift cars : compact fluorescent ; Efficiency measure: connected to lift call button.
 - Hallway/ Lobbies : compact fluorescent; Efficiency measure: daylight sensor and motion sensor.
 - *Central energy system**
 - Lift : Must install gearless traction with VVVF motor : Number of Levels (Including basement) :5
 - Must install a central hot water system solar gas boosted

BASIX Commitments- Common Areas (Non-Building Specific)

- Water Commitments:**
- *Fixtures**
 - Must install 3 Star rating toilet flushing system in any common toilet.
 - Must install 3 Star rating taps.
- Energy Commitments:**
- *Ventilation**

Must install ventilation in:

 - Basement 1- All Buildings: Ventilation (supply + exhaust); Efficiency measure: Carbon monoxide monitor + VSD fan.
 - Plant or Service Room- No Mechanical Ventilation.
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Must install lighting in:

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SHEET TITLE: Exterior Elevations 2/2	
SHEET NO:	DA 301
SCALE:	As indicated

DRAWN BY: MT
CHECKED BY: FG

PROJECT DETAIL: Proposed Residential Development at: 20 Robert Street, Penrith	
JOB NO: 170869	DATE: Apr 2017
LODGE AT: Penrith City Council	



1 Streetscape
1 : 500

REVISIONS			
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SHEET TITLE:
Streetscape

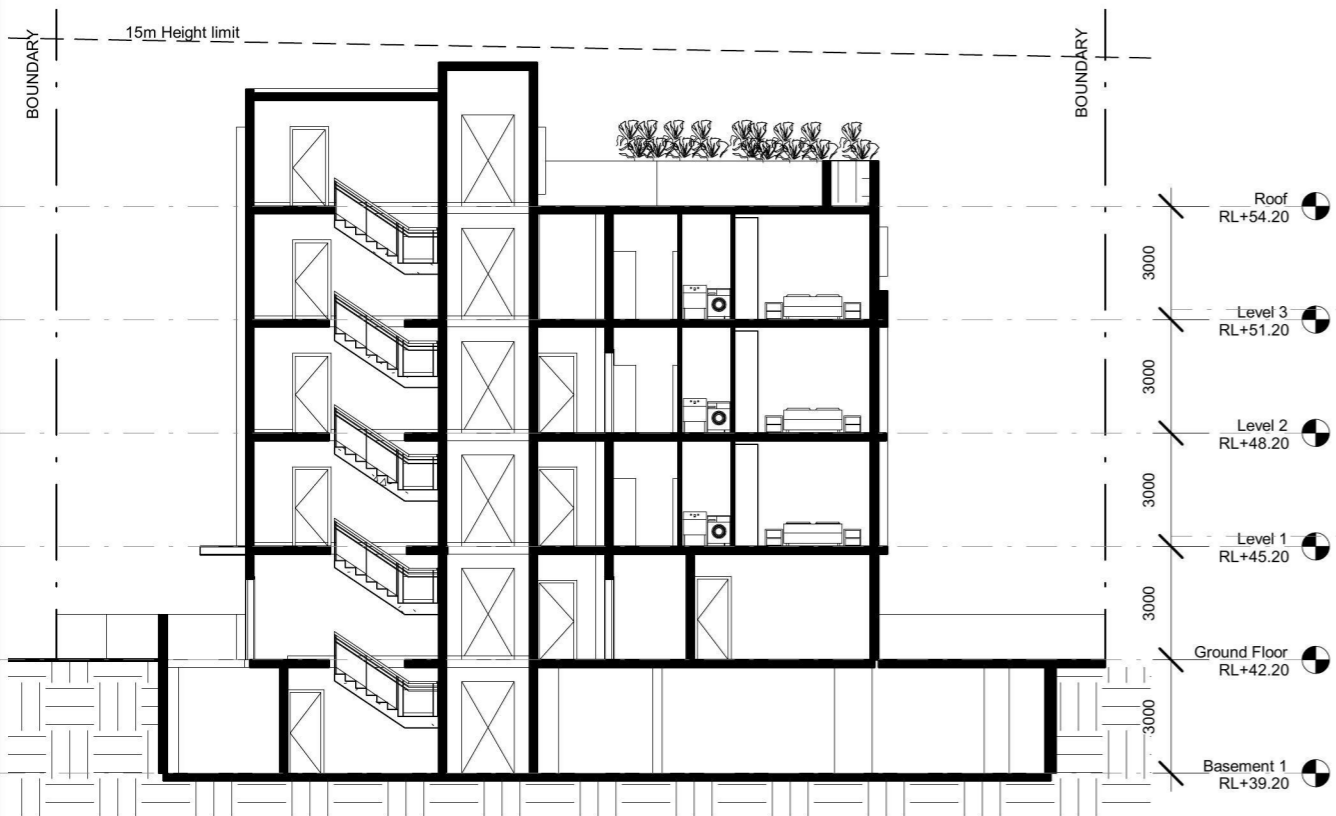
SHEET NO: DA 302
SCALE: 1 : 500

DRAWN BY:
MT

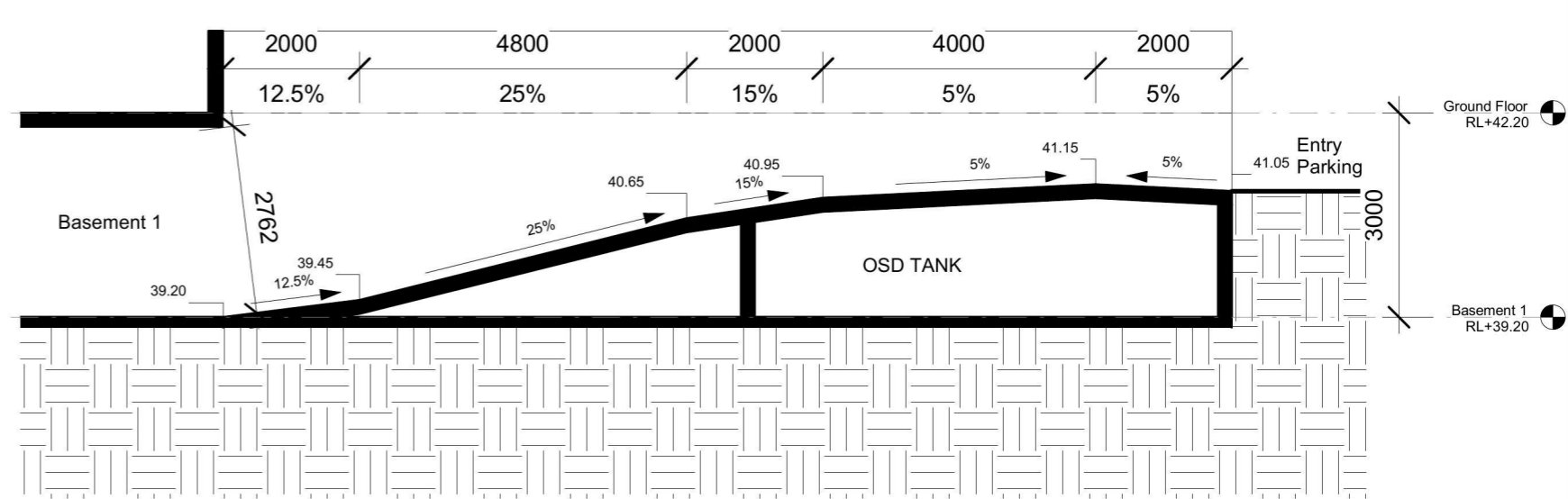
CHECKED BY:
FG

PROJECT DETAIL:
Proposed Residential Development
at 20 Robert Street, Penrith

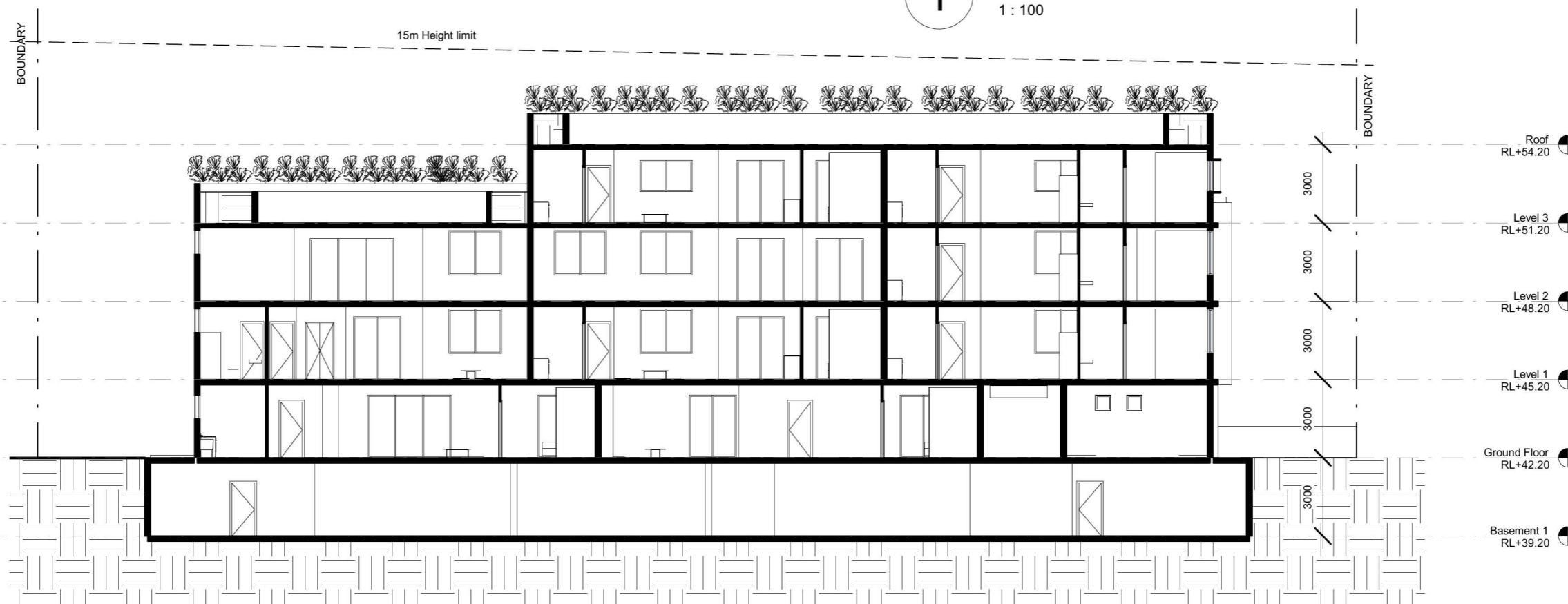
JOB NO: 170869 DATE: Apr 2017
LODGE AT: Penrith City Council



3 Cross Section
1 : 200



1 Ramp Detail Section
1 : 100



4 Long Section
1 : 200

REVISIONS			
ISSUE	DESCRIPTION	DATE	BY
A	Issue for DA submission	7.9.18	MT

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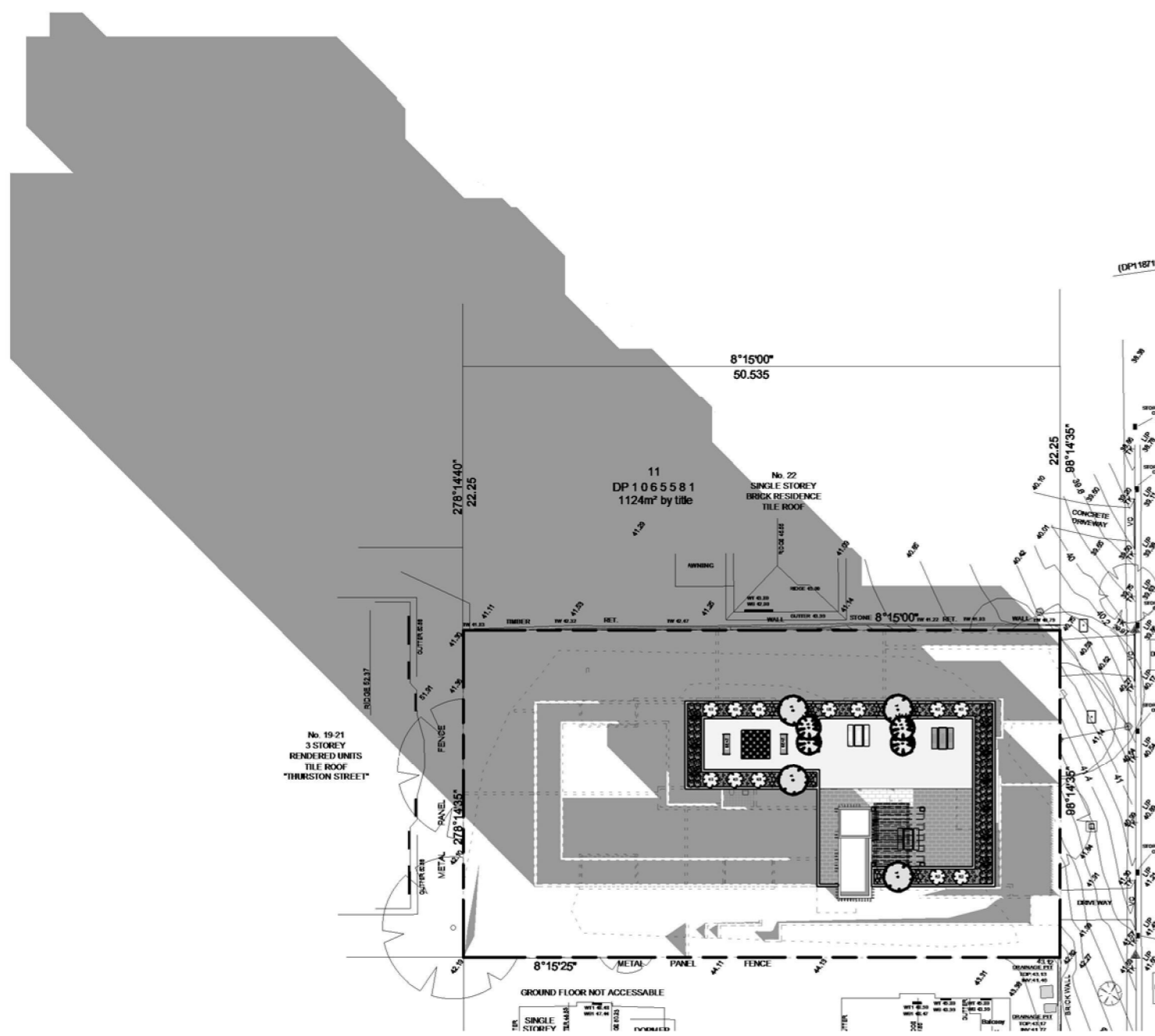


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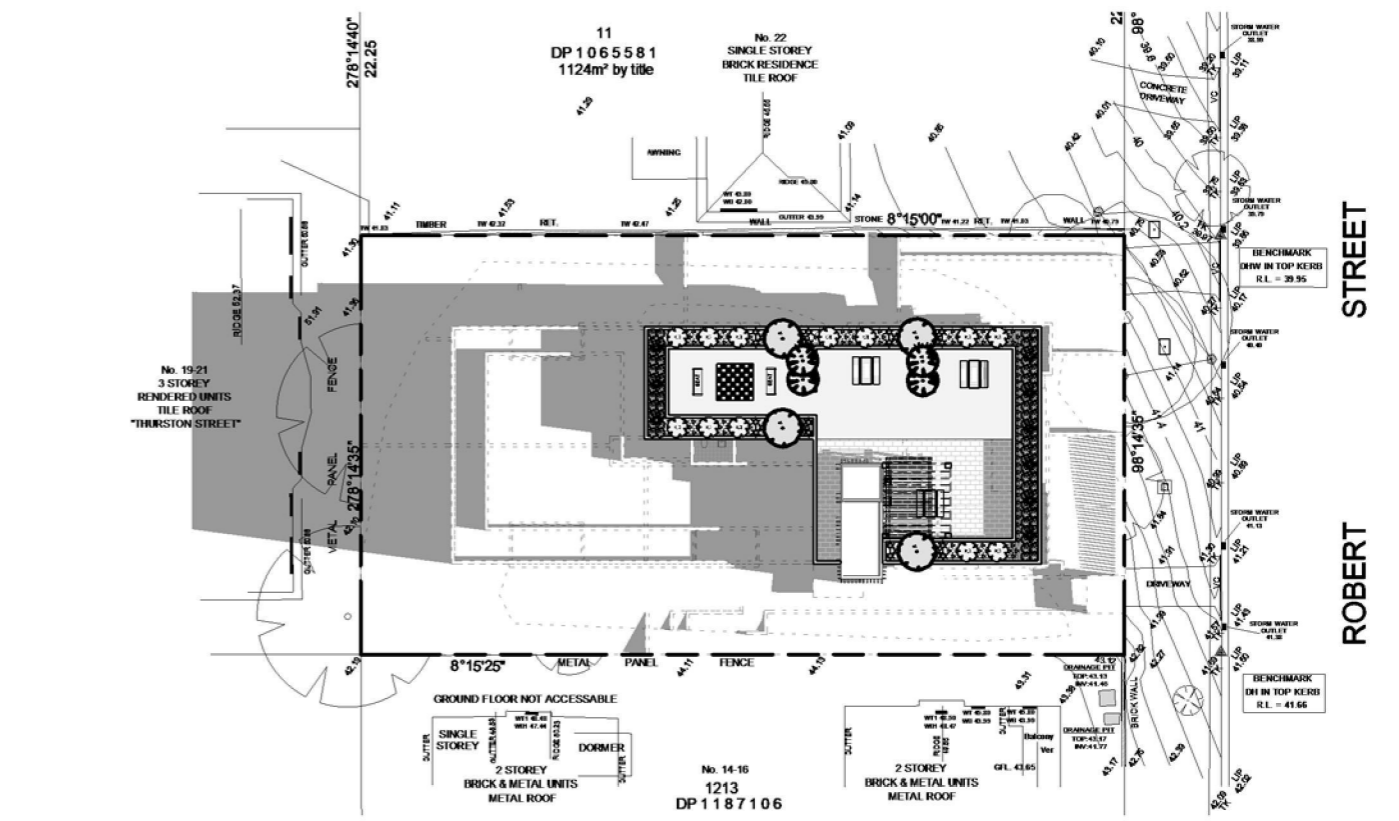
SHEET TITLE:
Sections
SHEET NO: DA 303
SCALE: As indicated

DRAWN BY:
MT
CHECKED BY:
FG

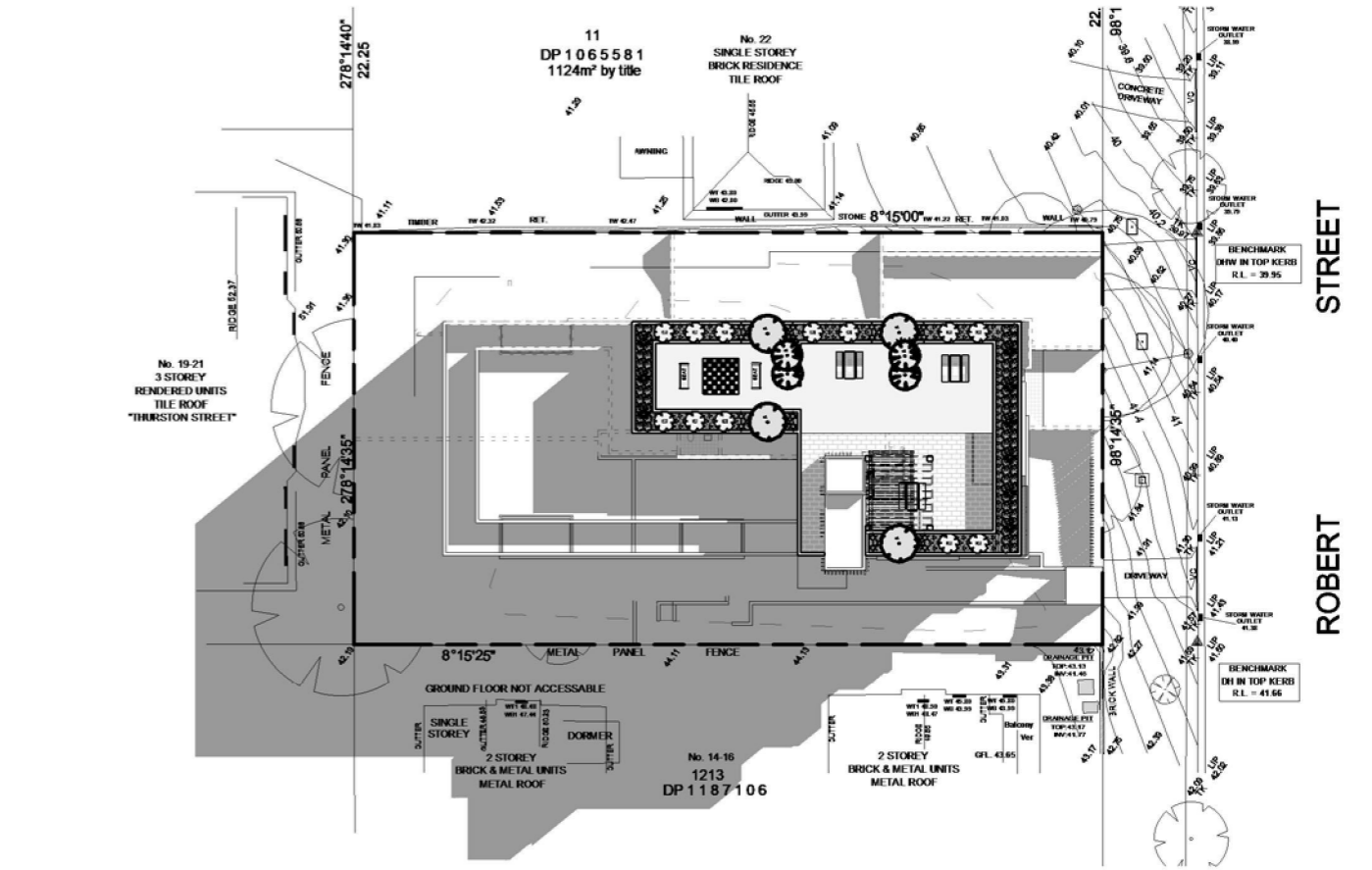
PROJECT DETAIL:
Proposed Residential Development
at: 20 Robert Street, Penrith
JOB NO: 170869 DATE: Apr 2017
LODGE AT: Penrith City Council



1 Shadow 9 am - 21.06
1 : 500



2 Shadow 12 pm - 21.06
1 : 500



3 Shadow 3 pm - 21.06
1 : 500

REVISIONS			
ISSUE	DESCRIPTION	DATE	BY
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SHEET TITLE: Shadow Diagrams	
SHEET NO:	DA 601
SCALE:	1 : 500

DRAWN BY:	MT
CHECKED BY:	FG

PROJECT DETAIL: Proposed Residential Development at: 20 Robert Street, Penrith	
JOB NO: 170869	DATE: Apr 2017
LODGE AT: Penrith City Council	

ADG Key Compliance Schedule

Ground Floor

Units	Beds	Bathrooms	Units Area	P.O.S / Balcony Areas	Basement Storage Volume	Unit Storage Volume	Total Storage Volume	Width of Living Rooms or Living / Dining Room	Min. 2 Hours Solar Access 9am - 3pm Living & P.O.S	No Direct Solar Access 9am - 3pm	Naturally Cross Ventilated	Overall Depth of Cross-Through Apartment Does Not Exceed 18m	Apartments Achieve Min. Internal Areas Based on the Number of Bedrooms & Bathrooms	Min. Ceiling Height of 2.7m for Habitable Rooms & 2.4m for Non-Habitable Rooms	Every Habitable Room has a Window with Glass Area not Less than 10% of the Floor Area of the Room	Master Bedrooms have Min Area of 10m ² & other Bedrooms 9m ² (Excluding Wardrobe)	Bedrooms Achieve Min Dimensions of 3m (Excluding Wardrobes)	Living Rooms or Combined Living / Dining Rooms achieve Min Width Required Based on Number of Bedrooms	The Width of Cross-Through Apartments are at least 4m	Apartments Achieve Min. P.O.S / Balcony Areas & Depths Based on Number of Bedrooms	Apartments Achieve Min. Storage Volume Based on Number of Bedrooms
001	1	1	59m ²	9m ²	Min 3m ³	3.1m ³	6.1m ³	3600mm	Yes	N/A	No	N/A	Yes	Yes	Yes	Yes	Yes	Yes	N/A	Yes	Yes
002	2	2	92m ²	159m ²	Min 4m ³	4.2m ³	8.2m ³	8147mm	Yes	N/A	Yes	N/A	Yes	Yes	Yes	Yes	Yes	Yes	N/A	Yes	Yes
003	3	2	112m ²	174m ²	Min 5m ³	7.7m ³	12.7m ³	6257mm	Yes	N/A	Yes	N/A	Yes	Yes	Yes	Yes	Yes	Yes	N/A	Yes	Yes
004	2	2	91m ²	83m ²	Min 4m ³	4.2m ³	8.2m ³	4700mm	Yes	N/A	No	N/A	Yes	Yes	Yes	Yes	Yes	Yes	N/A	Yes	Yes
005	2	2	85m ²	43m ²	Min 4m ³	4.2m ³	8.2m ³	6575mm	Yes	N/A	Yes	N/A	Yes	Yes	Yes	Yes	Yes	Yes	N/A	Yes	Yes
									Total: 5/5	Total 0/5	Total: 3/5										

First Floor

Units	Beds	Bathrooms	Units Area	P.O.S / Balcony Areas	Basement Storage Volume	Unit Storage Volume	Total Storage Volume	Width of Living Rooms or Living / Dining Room	Min. 2 Hours Solar Access 9am - 3pm Living & P.O.S	No Direct Solar Access 9am - 3pm	Naturally Cross Ventilated	Overall Depth of Cross-Through Apartment Does Not Exceed 18m	Apartments Achieve Min. Internal Areas Based on the Number of Bedrooms & Bathrooms	Min. Ceiling Height of 2.7m for Habitable Rooms & 2.4m for Non-Habitable Rooms	Every Habitable Room has a Window with Glass Area not Less than 10% of the Floor Area of the Room	Master Bedrooms have Min Area of 10m ² & other Bedrooms 9m ² (Excluding Wardrobe)	Bedrooms Achieve Min Dimensions of 3m (Excluding Wardrobes)	Living Rooms or Combined Living / Dining Rooms achieve Min Width Required Based on Number of Bedrooms	The Width of Cross-Through Apartments are at least 4m	Apartments Achieve Min. P.O.S / Balcony Areas & Depths Based on Number of Bedrooms	Apartments Achieve Min. Storage Volume Based on Number of Bedrooms
101	1	1	59m ²	8m ²	Min 3m ³	3.1m ³	6.1m ³	4000mm	Yes	N/A	No	N/A	Yes	Yes	Yes	Yes	Yes	Yes	N/A	Yes	Yes
102	2	2	79m ²	10m ²	Min 4m ³	4.3m ³	8.3m ³	4000mm	Yes	N/A	Yes	N/A	Yes	Yes	Yes	Yes	Yes	Yes	N/A	Yes	Yes
103	2	2	83m ²	10m ²	Min 4m ³	4.6m ³	8.6m ³	4000mm	Yes	N/A	Yes	N/A	Yes	Yes	Yes	Yes	Yes	Yes	N/A	Yes	Yes
104	2	2	81m ²	10m ²	Min 4m ³	4.7m ³	8.7m ³	4500mm	Yes	N/A	No	N/A	Yes	Yes	Yes	Yes	Yes	Yes	N/A	Yes	Yes
105	2	2	77m ²	10m ²	Min 4m ³	5m ³	9m ³	6000mm	Yes	N/A	Yes	N/A	Yes	Yes	Yes	Yes	Yes	Yes	N/A	Yes	Yes
106	2	2	75m ²	10m ²	Min 4m ³	5m ³	9m ³	4500mm	Yes	N/A	Yes	N/A	Yes	Yes	Yes	Yes	Yes	Yes	N/A	Yes	Yes
									Total: 6/6	Total 0/6	Total: 4/6										

Second Floor

Units	Beds	Bathrooms	Units Area	P.O.S / Balcony Areas	Basement Storage Volume	Unit Storage Volume	Total Storage Volume	Width of Living Rooms or Living / Dining Room	Min. 2 Hours Solar Access 9am - 3pm Living & P.O.S	No Direct Solar Access 9am - 3pm	Naturally Cross Ventilated	Overall Depth of Cross-Through Apartment Does Not Exceed 18m	Apartments Achieve Min. Internal Areas Based on the Number of Bedrooms & Bathrooms	Min. Ceiling Height of 2.7m for Habitable Rooms & 2.4m for Non-Habitable Rooms	Every Habitable Room has a Window with Glass Area not Less than 10% of the Floor Area of the Room	Master Bedrooms have Min Area of 10m ² & other Bedrooms 9m ² (Excluding Wardrobe)	Bedrooms Achieve Min Dimensions of 3m (Excluding Wardrobes)	Living Rooms or Combined Living / Dining Rooms achieve Min Width Required Based on Number of Bedrooms	The Width of Cross-Through Apartments are at least 4m	Apartments Achieve Min. P.O.S / Balcony Areas & Depths Based on Number of Bedrooms	Apartments Achieve Min. Storage Volume Based on Number of Bedrooms
201	1	1	59m ²	8m ²	Min 3m ³	3.1m ³	6.1m ³	4000mm	Yes	N/A	No	N/A	Yes	Yes	Yes	Yes	Yes	Yes	N/A	Yes	Yes
202	2	2	79m ²	10m ²	Min 4m ³	4.3m ³	8.3m ³	4000mm	Yes	N/A	Yes	N/A	Yes	Yes	Yes	Yes	Yes	Yes	N/A	Yes	Yes
203	2	2	83m ²	10m ²	Min 4m ³	4.6m ³	8.6m ³	4000mm	Yes	N/A	Yes	N/A	Yes	Yes	Yes	Yes	Yes	Yes	N/A	Yes	Yes
204	2	2	81m ²	10m ²	Min 4m ³	4.7m ³	8.7m ³	4500mm	Yes	N/A	No	N/A	Yes	Yes	Yes	Yes	Yes	Yes	N/A	Yes	Yes
205	2	2	77m ²	10m ²	Min 4m ³	5m ³	9m ³	6000mm	Yes	N/A	Yes	N/A	Yes	Yes	Yes	Yes	Yes	Yes	N/A	Yes	Yes
206	2	2	75m ²	10m ²	Min 4m ³	5m ³	9m ³	4500mm	Yes	N/A	Yes	N/A	Yes	Yes	Yes	Yes	Yes	Yes	N/A	Yes	Yes
									Total: 6/6	Total 0/6	Total: 4/6										

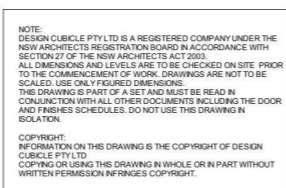
Third Floor

Units	Beds	Bathrooms	Units Area	P.O.S / Balcony Areas	Basement Storage Volume	Unit Storage Volume	Total Storage Volume	Width of Living Rooms or Living / Dining Room	Min. 2 Hours Solar Access 9am - 3pm Living & P.O.S	No Direct Solar Access 9am - 3pm	Naturally Cross Ventilated	Overall Depth of Cross-Through Apartment Does Not Exceed 18m	Apartments Achieve Min. Internal Areas Based on the Number of Bedrooms & Bathrooms	Min. Ceiling Height of 2.7m for Habitable Rooms & 2.4m for Non-Habitable Rooms	Every Habitable Room has a Window with Glass Area not Less than 10% of the Floor Area of the Room	Master Bedrooms have Min Area of 10m ² & other Bedrooms 9m ² (Excluding Wardrobe)	Bedrooms Achieve Min Dimensions of 3m (Excluding Wardrobes)	Living Rooms or Combined Living / Dining Rooms achieve Min Width Required Based on Number of Bedrooms	The Width of Cross-Through Apartments are at least 4m	Apartments Achieve Min. P.O.S / Balcony Areas & Depths Based on Number of Bedrooms	Apartments Achieve Min. Storage Volume Based on Number of Bedrooms
301	2	2	81m ²	10m ²	Min 4m ³	4.7m ³	8.7m ³	4500mm	Yes	N/A	No	N/A	Yes	Yes	Yes	Yes	Yes	Yes	N/A	Yes	Yes
302	2	2	77m ²	10m ²	Min 4m ³	5m ³	9m ³	6000mm	Yes	N/A	Yes	N/A	Yes	Yes	Yes	Yes	Yes	Yes	N/A	Yes	Yes
303	2	2	75m ²	10m ²	Min 4m ³	5m ³	9m ³	4500mm	Yes	N/A	Yes	N/A	Yes	Yes	Yes	Yes	Yes	Yes	N/A	Yes	Yes
									Total: 3/3	Total 0/3	Total: 2/3										

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ISSUE	DESCRIPTION	DATE	BY
A	Issue for DA submission	7.9.18	MT

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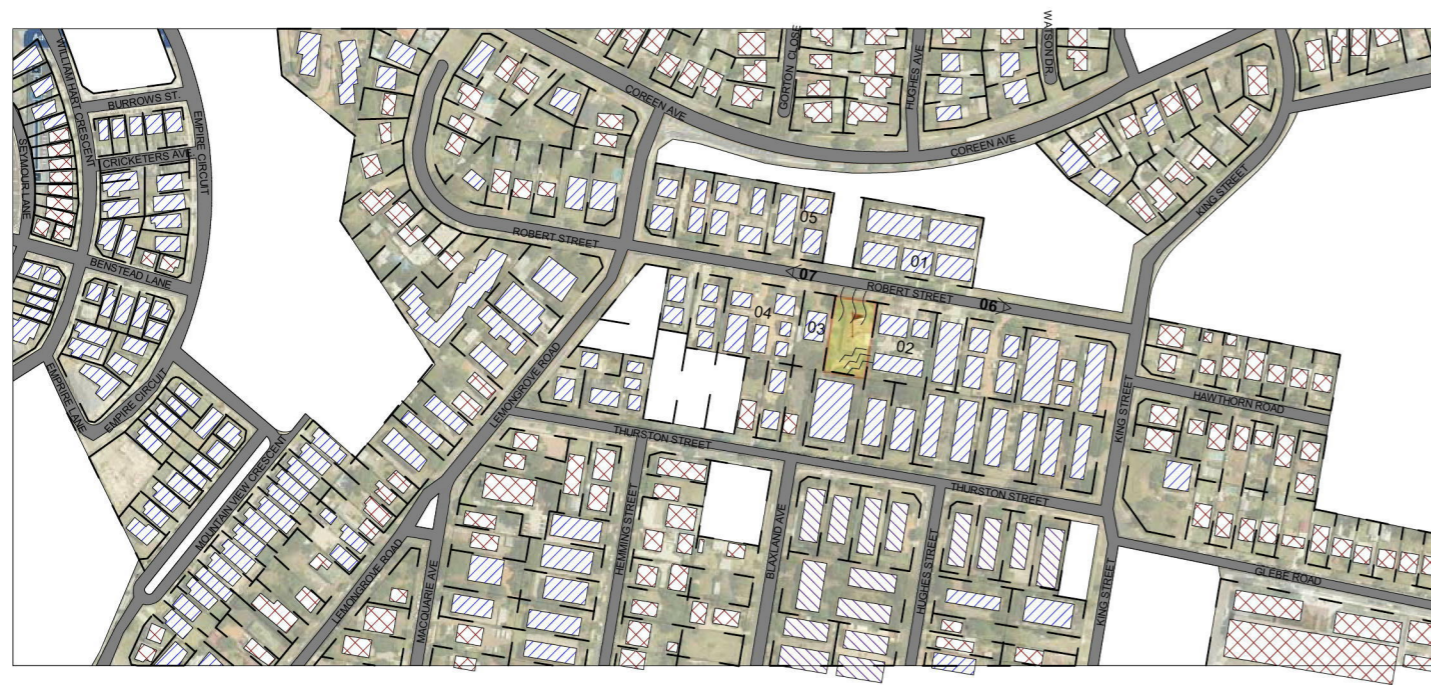
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SHEET TITLE: ADG Key Compliance Schedule	
SHEET NO:	DA 700
SCALE:	1 : 120

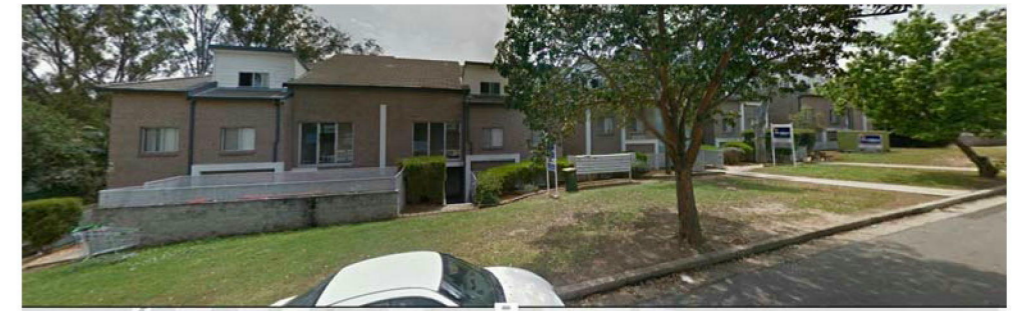
DRAWN BY: MT
CHECKED BY: FG

PROJECT DETAIL: Proposed Residential Development at: 20 Robert Street, Penrith	
JOB NO: 170869	DATE: Apr 2017
LODGE AT: Penrith City Council	

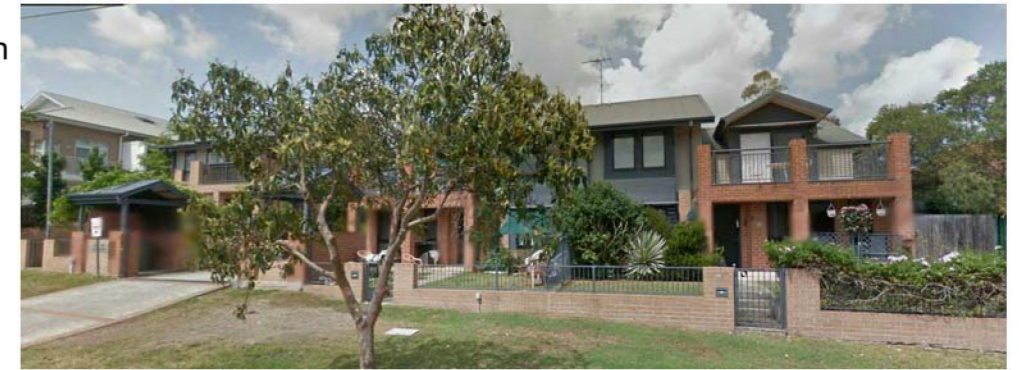


Legend

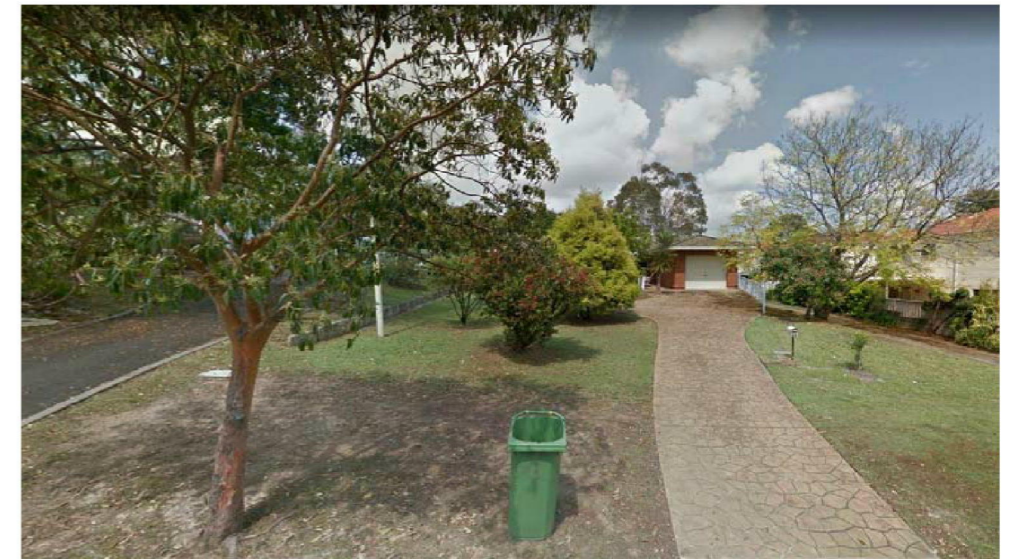
-  One Storey
-  Two Storey
-  Three Storey
-  Vehicular Circulation



01 - 15 -19 Robert Street, Penrith



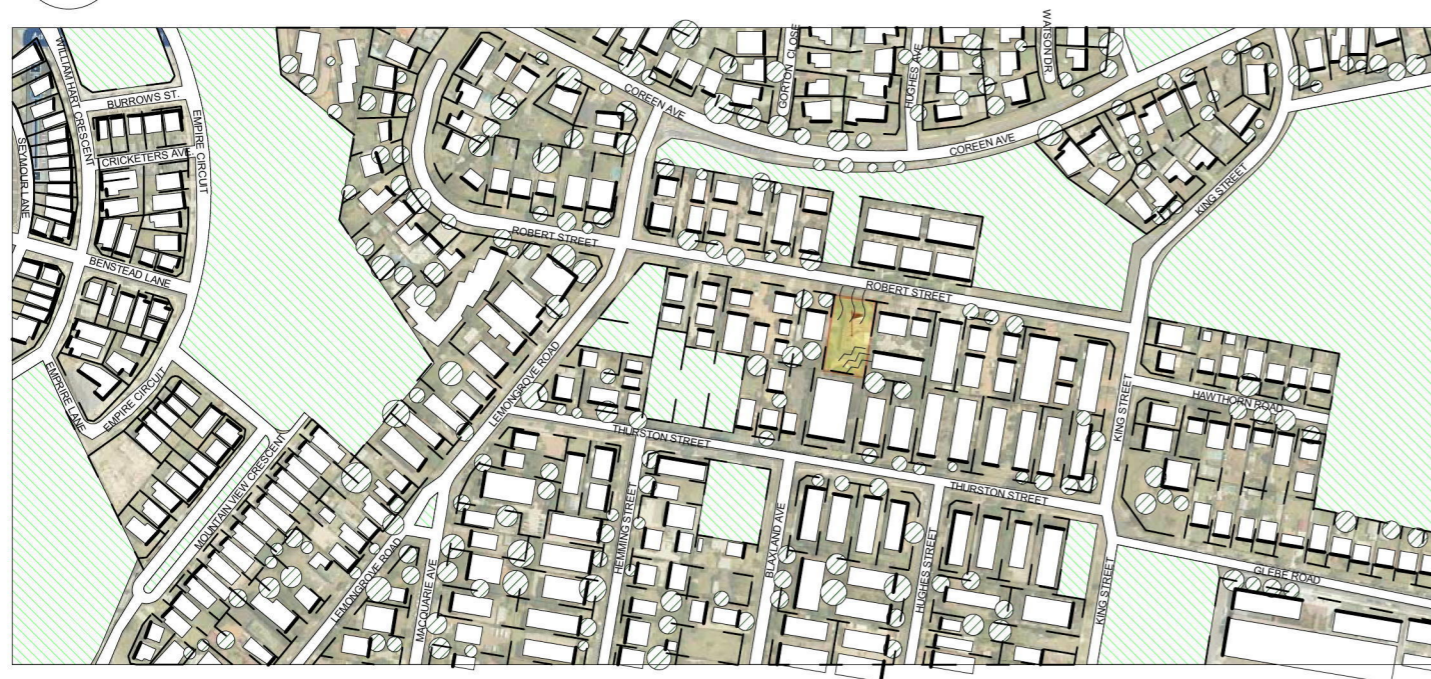
02 - 16-18 Robert Street, Penrith







03 - 22 Robert Street, Penrith

1 Building Use & Photo Location

1 : 5000



Legend

-  Open Space
-  Major Trees
-  Noise
-  Prevailing Winds
North Easterly -
South Westerly

2 Open Space, Landform & Building Edge

1 : 5000

REVISIONS			
ISSUE	DESCRIPTION	DATE	BY
A	Issue for DA submission	7.9.18	MT

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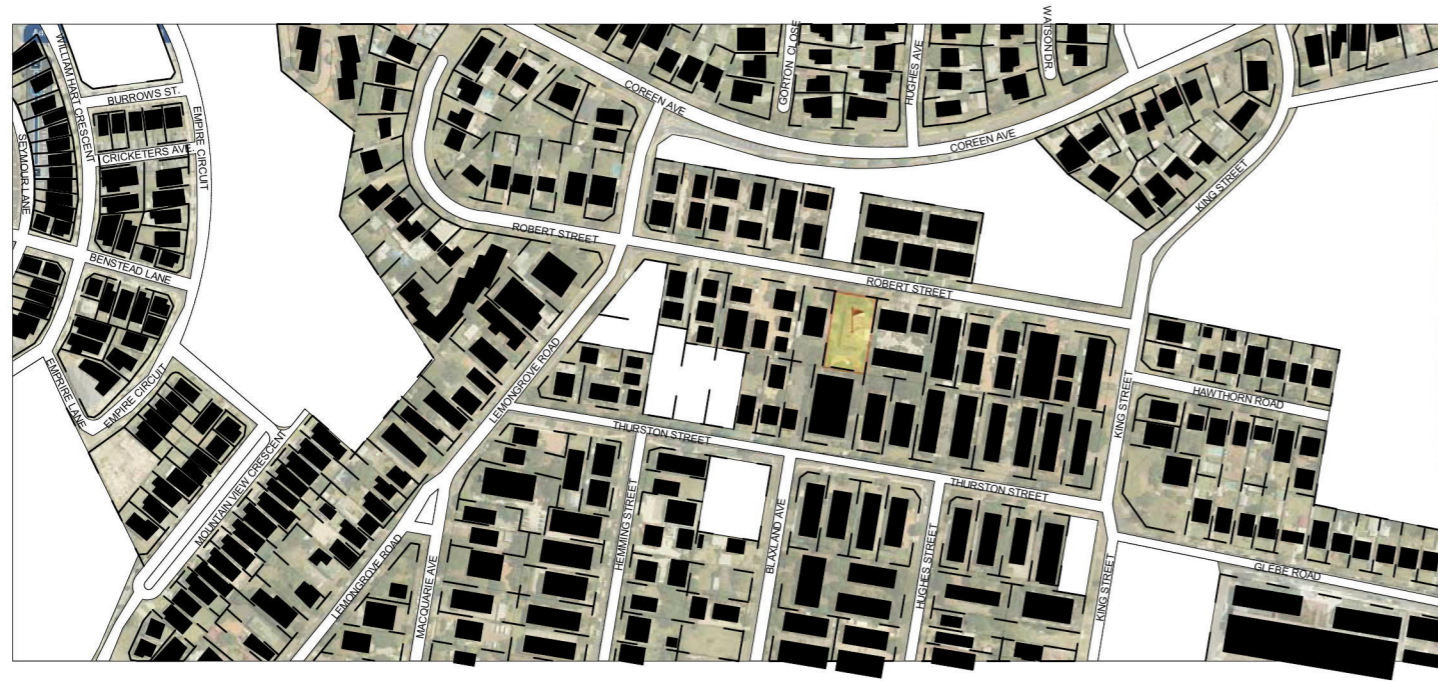
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SHEET TITLE: Site Analysis 1 of 2	
SHEET NO:	UA 100
SCALE:	1 : 5000

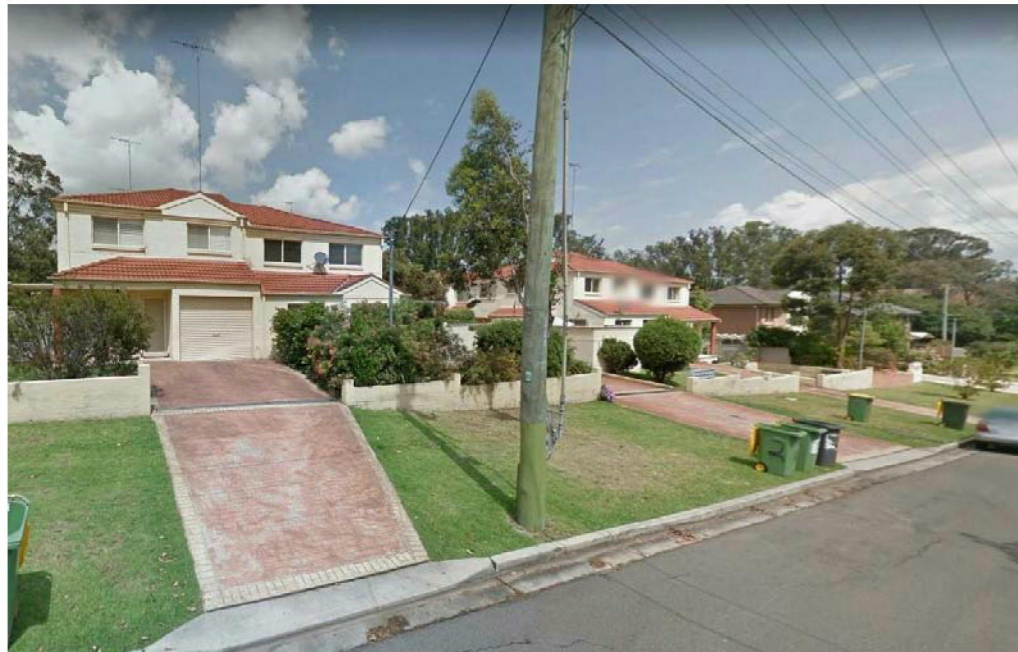
DRAWN BY: MT
CHECKED BY: FG

PROJECT DETAIL: Proposed Residential Development at: 20 Robert Street, Penrith	
JOB NO: 170869	DATE: Apr 2017
LODGE AT: Penrith City Council	

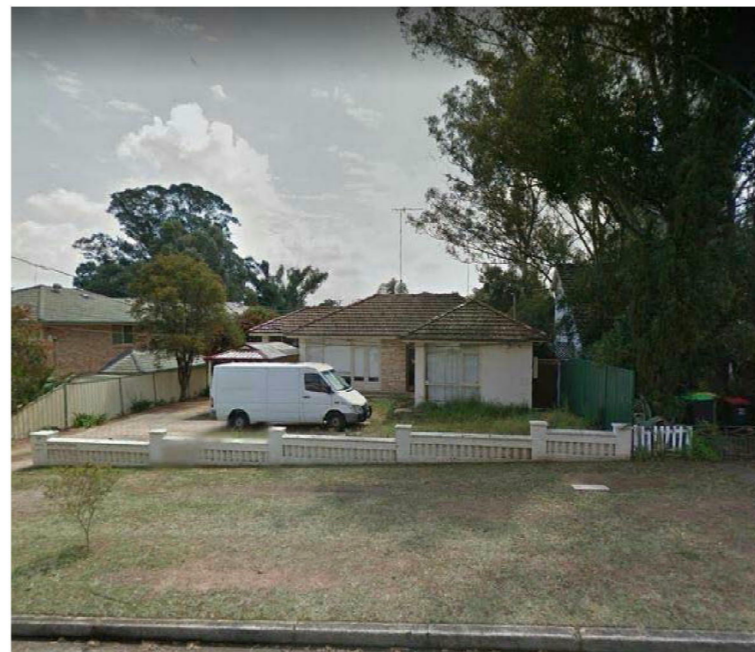


1 Figure Ground & Location
1 : 5000

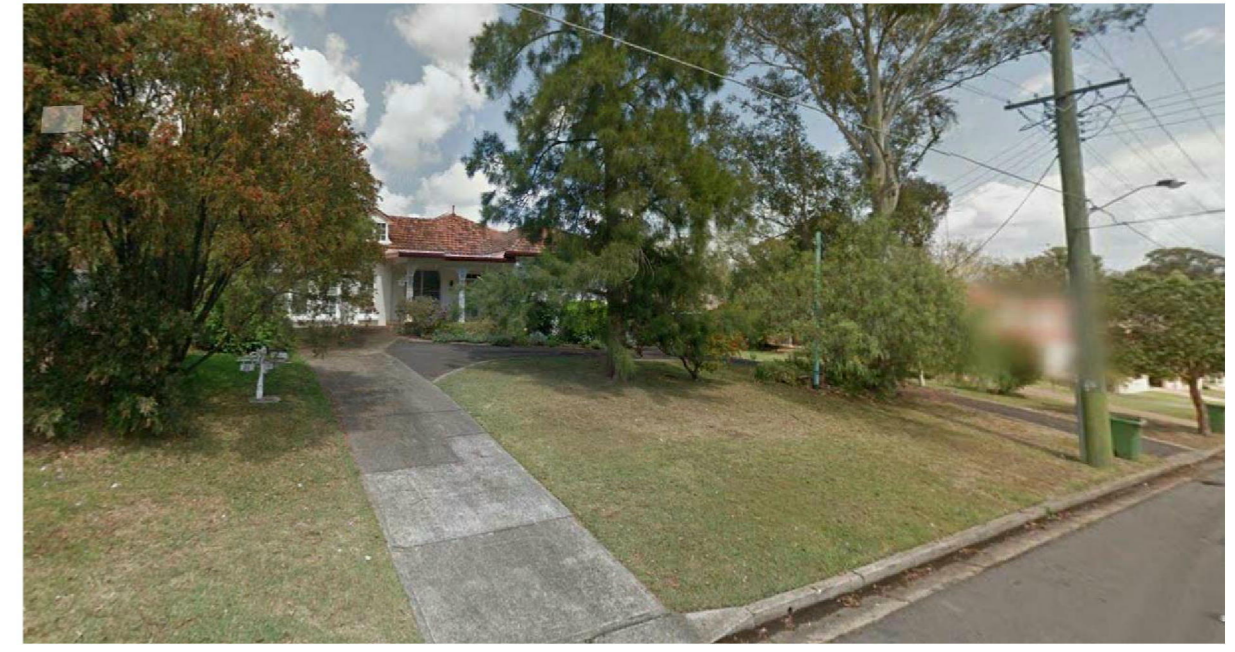
06 - Perspective Looking Through Robert Street



04 - 24 - 28 Robert Street, Penrith



05 - 23 Robert Street, Penrith

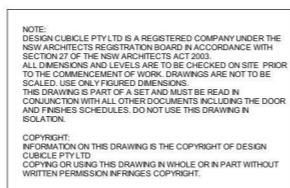


07 - 20 Robert Street, Penrith

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ISSUE	DESCRIPTION	DATE	BY
A	Issue for DA submission	7.9.18	MT

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SHEET TITLE: Site Analysis 2 of 2	
SHEET NO:	UA 101
SCALE:	1 : 5000

DRAWN BY: MT
CHECKED BY: FG

PROJECT DETAIL: Proposed Residential Development at: 20 Robert Street, Penrith	
JOB NO: 170869	DATE: Apr 2017
LODGE AT: Penrith City Council	

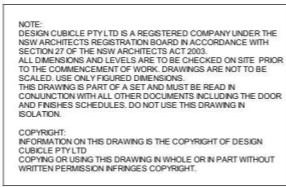


1 Average Front Setback
1 : 1000

REVISIONS			
ISSUE	DESCRIPTION	DATE	BY
A	Issue for DA submission	7.9.18	MT

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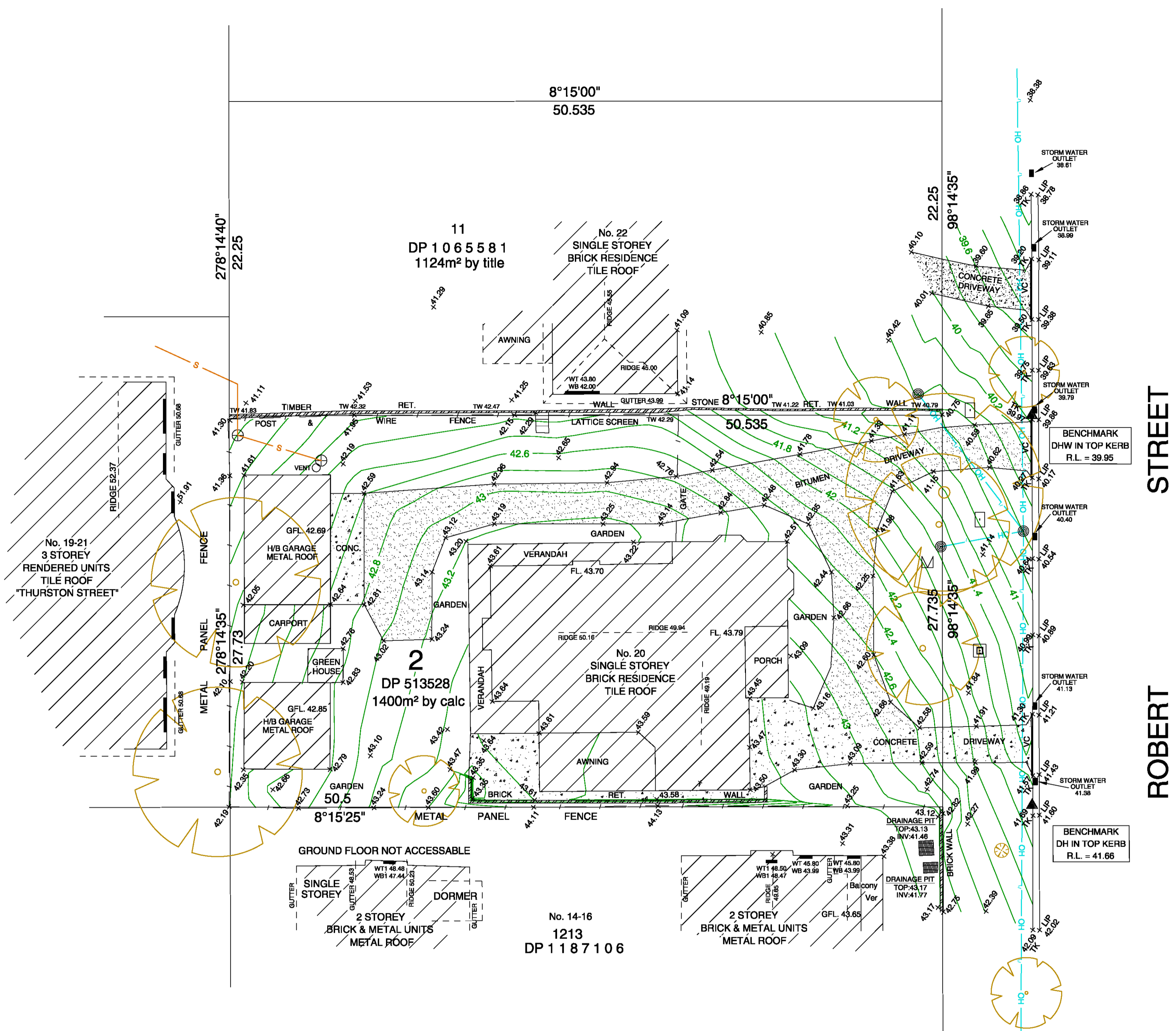
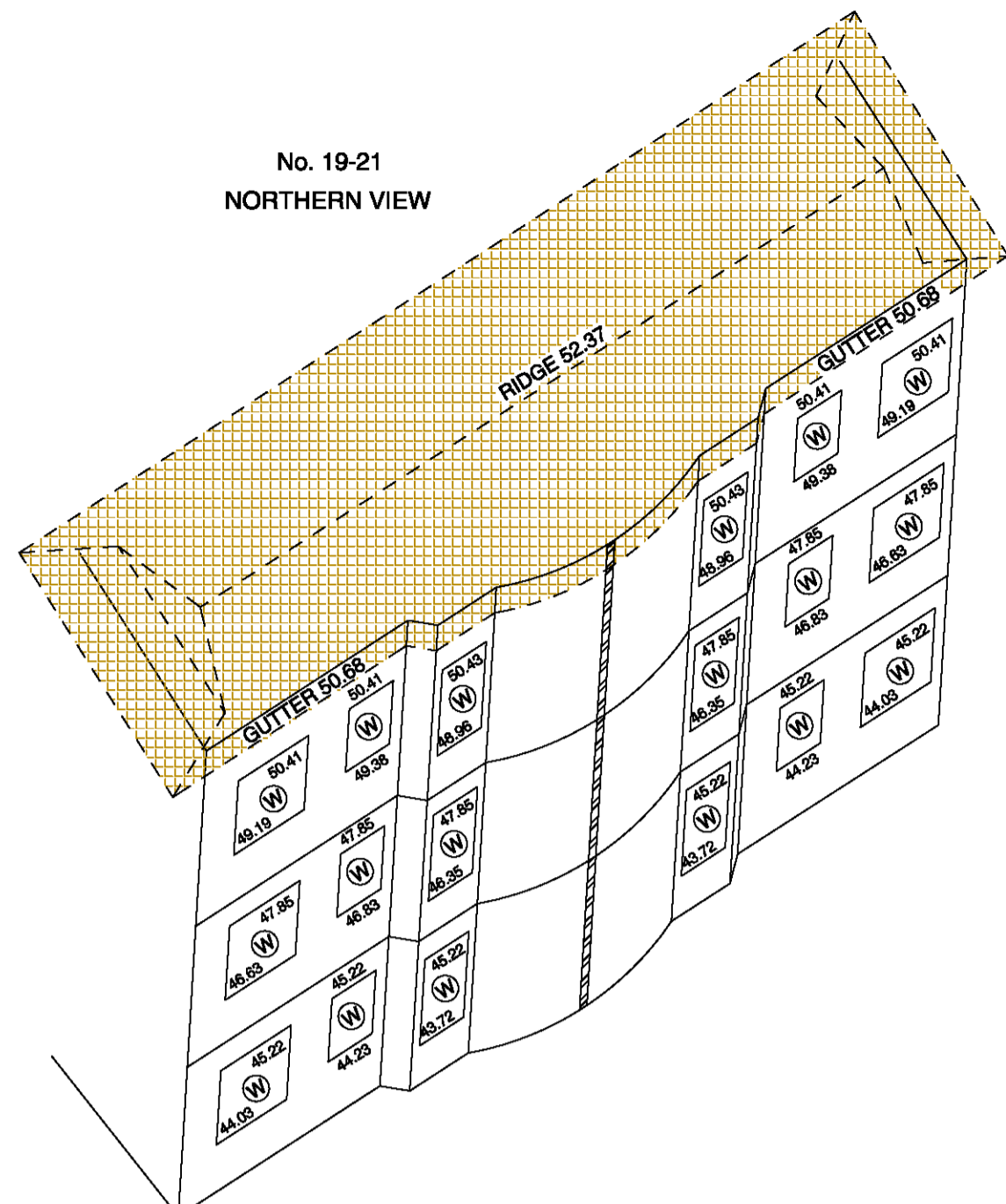
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9883 3242
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WEB: 47 116316 333
ABN:

SHEET TITLE: Average Front Setback	
SHEET NO:	UA 102
SCALE:	1 : 1000

DRAWN BY:
MT

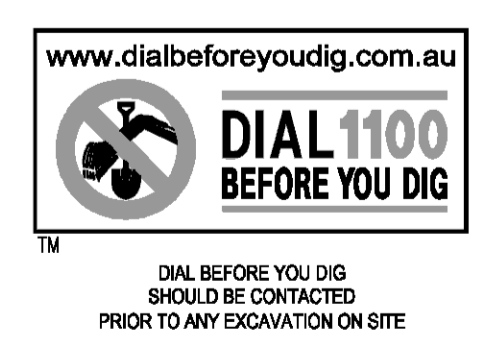
CHECKED BY:
FG

PROJECT DETAIL: Proposed Residential Development at: 20 Robert Street, Penrith	
JOB NO: 170869	DATE: Apr 2017
LODGE AT: Penrith City Council	

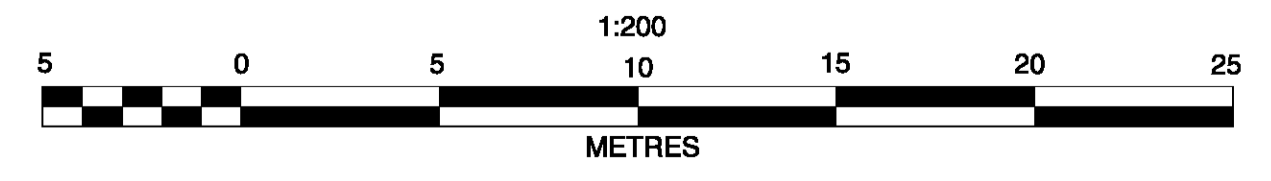


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 2. DATUM OF LEVELS: AUSTRALIAN HEIGHT DATUM
 3. ALL AREAS AND DIMENSIONS HAVE BEEN COMPILED FROM PLANS MADE AVAILABLE BY THE OFFICE OF LAND & PROPERTY INFORMATION (NSW) AND ARE SUBJECT TO FINAL SURVEY.
 4. NO SEARCH MADE OF LOCATION AND NATURE OF TELEPHONE, ELECTRICITY, SEWER, WATER, GAS AND DRAINAGE RECORDS AT THE RELEVANT AUTHORITY. PRIOR TO ANY CONSTRUCTION THE RELEVANT AUTHORITY SHOULD BE CONTACTED FOR LOCATION OF SERVICES.
 5. THE POSITION OF IMPROVEMENTS IN RELATION TO BOUNDARIES IS DIAGRAMMATIC ONLY.
 6. VISIBLE, ACCESSIBLE SERVICES LOCATED ONLY
 7. SIGNIFICANT TREES LOCATED ONLY.
 8. NEIGHBOURING HOUSES, RIDGE AND ROOF POSITIONS ARE APPROXIMATE ONLY.
 9. THIS TITLE BLOCK AND NOTES IS AN INTEGRAL PART OF THIS DRAWING WHICH IS NOT TO BE REMOVED.
 10. CONTOURS ARE INDICATIVE ONLY. SPOT LEVELS SHOULD BE USED FOR CALCULATIONS OF QUANTITIES WITH CAUTION.

- WT DENOTES LEVEL AT TOP OF WINDOW
- WB DENOTES LEVEL AT BOTTOM OF WINDOW
- TW DENOTES LEVEL AT TOP OF WALL
- WT1 DENOTES LEVEL AT TOP OF FIRST FLOOR WINDOW
- WB1 DENOTES LEVEL AT BOTTOM FIRST FLOOR OF WINDOW
- VC DENOTES VEHICULAR CROSSING
- TK DENOTES LEVEL AT TOP OF KERB
- LIP DENOTES LEVEL AT LIP OF KERB



- OVERHEAD POWER
- APPROX SEWER
- HYDRANT
- WATER METER
- COMMS. PIT
- POWER POLE
- SEWER INSPECTION POINT



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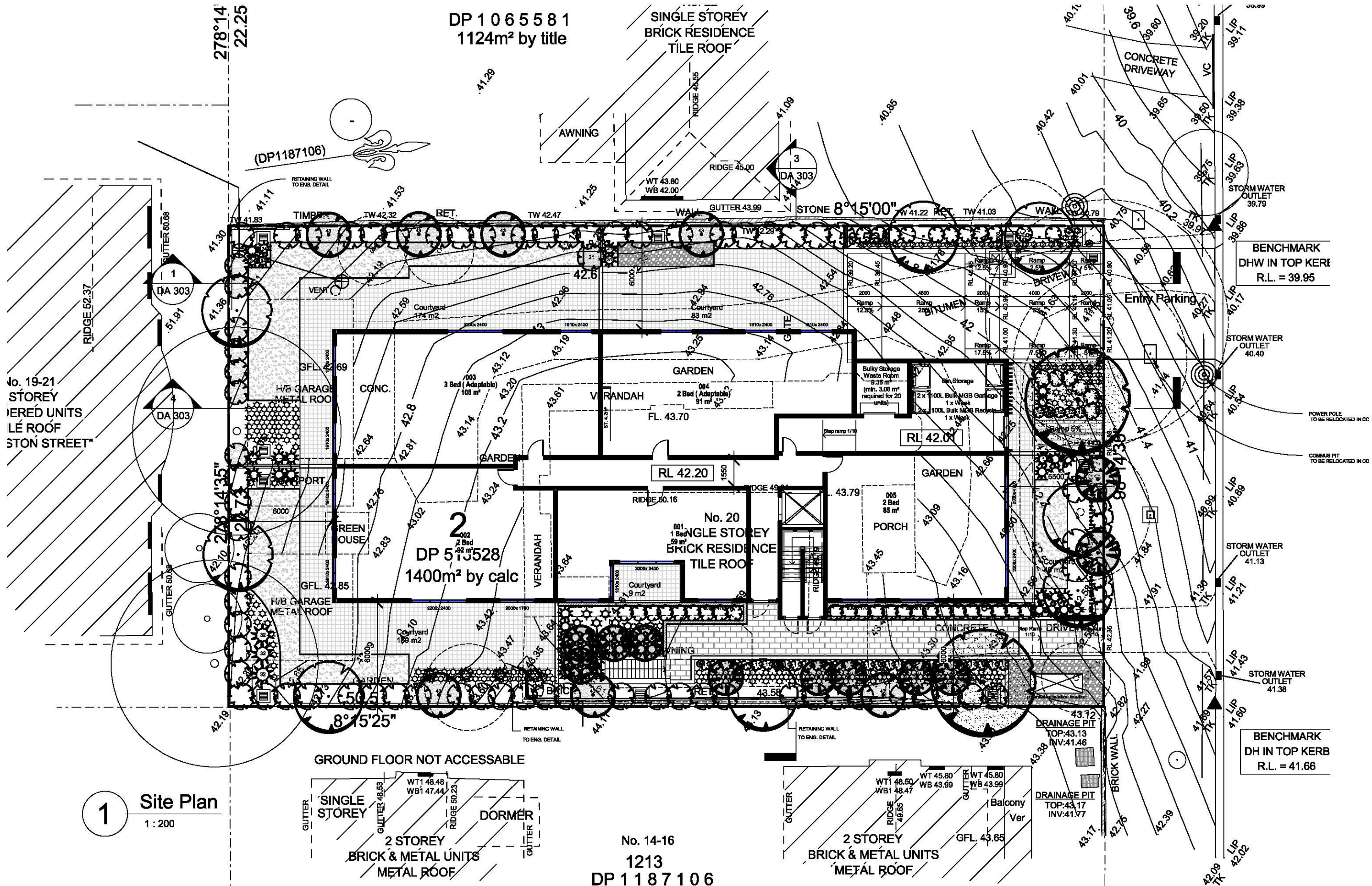
RHCO RICHARD HOGAN & CO.
SURVEYING & DEVELOPMENT CONSULTANTS

ABN 59 082 453 165
P.O. BOX 4365, Penrith Plaza, NSW 2750.
Phone: (02) 4732 6599
Web: www.rhco.com.au Email: admin@hoganco.com.au

SURVEYOR: SA
DRAWN: DM
REDUCTION RATIO: 1:200 @ A1
CONTOUR INTERVAL: 0.2m
SHEET 1 OF 1

ORIGIN OF LEVELS:
SSM 10919
R.L. = 34.053 (SCIMS)
DATUM: AUSTRALIAN HEIGHT DATUM
DATE: 06/02/2017
VERSION No.: B

PLAN OF DETAIL AND LEVELS OVER LOT 2 IN DP.513528 BEING No.20 ROBERT STREET, PENRITH	
CLIENT:	MORSON GROUP
L.G.A.:	PENRITH
JOB REF:	17043



1 Site Plan
1 : 200

REVISIONS			
ISSUE	DESCRIPTION	DATE	BY
A	Issue for DA submission	7.9.18	MT

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design cubicle
ARCHITECTURAL SOLUTIONS
an accredited & registered architectural practice

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9053 3242
EMAIL: sam@designcubicle.com.au
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47 1183 16 333

SHEET TITLE:
Site Plan

SHEET NO: DA 200

SCALE: 1 : 200

DRAWN BY:
MT

CHECKED BY:
FG

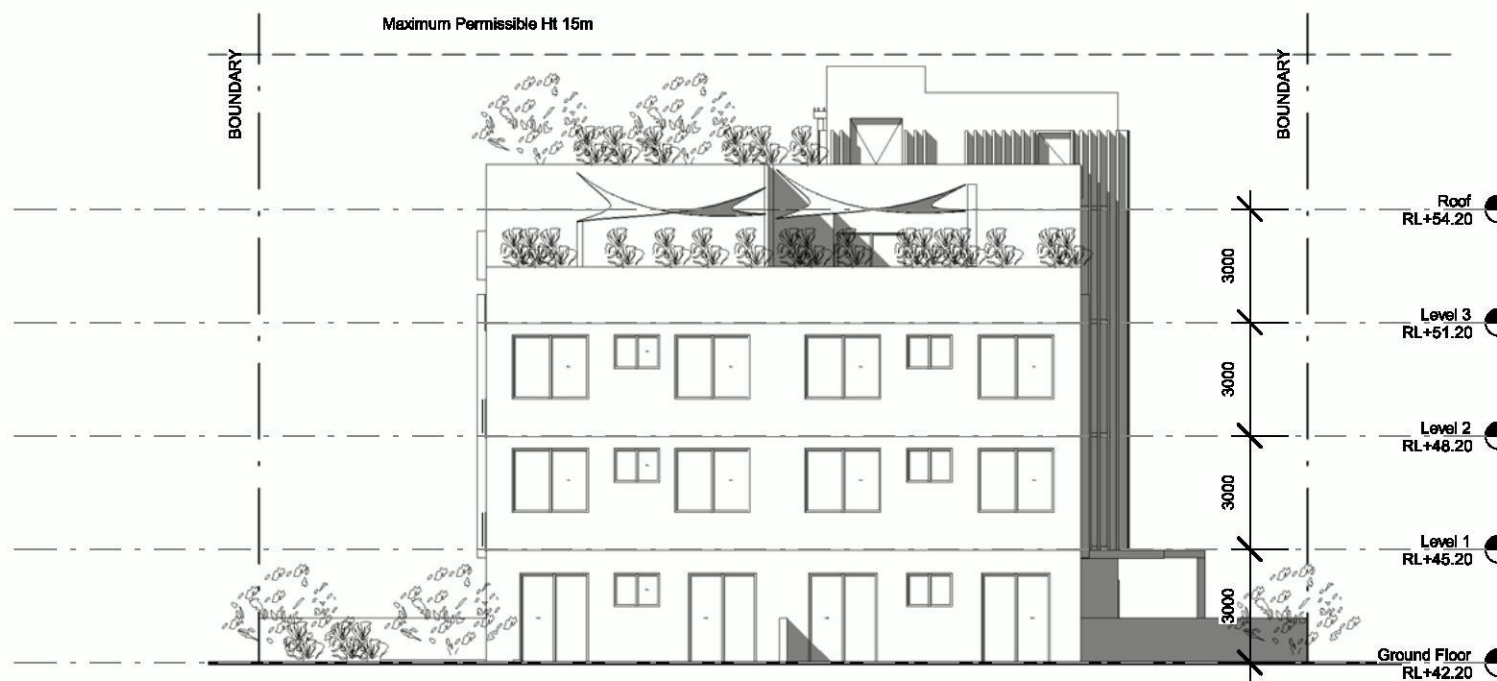
PROJECT DETAIL:
Proposed Residential Development
at: 20 Robert Street, Penrith

JOB NO: 170869 DATE: Apr 2017

LODGE AT: Penrith City Council



1 North Elevation
1 : 200



2 South Elevation
1 : 200

BASIX Commitments

Water Commitments:

***Fixtures**

- Must install 3 Star rating showerheads in all showers. (>4.5 but <=6L/min).
- Must install 4 Star rating toilet flushing system in each toilet.
- Must install 5 Star rating taps in each kitchen.
- Must install 5 Star rating taps in each bathroom.

Energy Commitments:

***Hotwater**

- Must install a gas instantaneous 6 star.

***Cooling/ Heating System**

- Must install 5 Star (new rating) rated 1-phase air conditioning or higher to the living areas of each dwelling.

***Ventilated fridge space - Yes**

***Ventilation**

Must install ventilation systems in:

- Bathroom: individual fan, ducted to facade or roof; Operation control: manual switch on/off.
- Kitchen: individual fan, ducted to facade or roof; Operation control: manual switch on/off
- Laundry: individual fan, ducted to facade or roof; Operation control: manual switch on/off

***Fixtures**

Dishwasher - 4.5*, Clothes dryer 6*

***Lighting**

- Must provide artificial lighting in each Kitchen, all Bathrooms/ toilets, each Laundry, all Hallways.

***Other**

- Must install gas cooktop and electric oven in the kitchen of all dwellings.
- Indoor clothes drying line

Common Areas

Water Commitments:

***Fixtures**

- Must install 3 Star rating toilet flushing system in any common toilet.
- Must install 3 Star rating taps.

Energy Commitments:

***Lighting**

Must install lighting in:

- Lift cars : compact fluorescent ; Efficiency measure: connected to lift call button.
- Hallway/ Lobbies : compact fluorescent; Efficiency measure: daylight sensor and motion sensor.

***Central energy system**

- Lift : Must install gearless traction with VVVF motor : Number of Levels (Including basement) : 5
- Must install a central hot water system solar gas boosted

BASIX Commitments- Common Areas (Non-Building Specific)

Water Commitments:

***Fixtures**

- Must install 3 Star rating toilet flushing system in any common toilet.
- Must install 3 Star rating taps.

Energy Commitments:

***Ventilation**

Must install ventilation in:

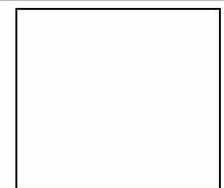
- Basement 1- All Buildings: Ventilation (supply + exhaust); Efficiency measure: Carbon monoxide monitor + VSD fan.
- Plant or Service Room- No Mechanical Ventilation.

***Lighting**

Must install lighting in:

- Basement : compact fluorescent; Efficiency measure: daylight sensors and motion sensor.
- Garbage rooms : compact fluorescent; Efficiency measure: manual on / manual off.
- Plant or Service room: compact fluorescent; Efficiency measure: manual on / manual off.

REVISIONS			
ISSUE	DESCRIPTION	DATE	BY
A	Issue for DA submission	7.9.18	MT



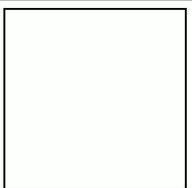
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ABN: 47 116316 333



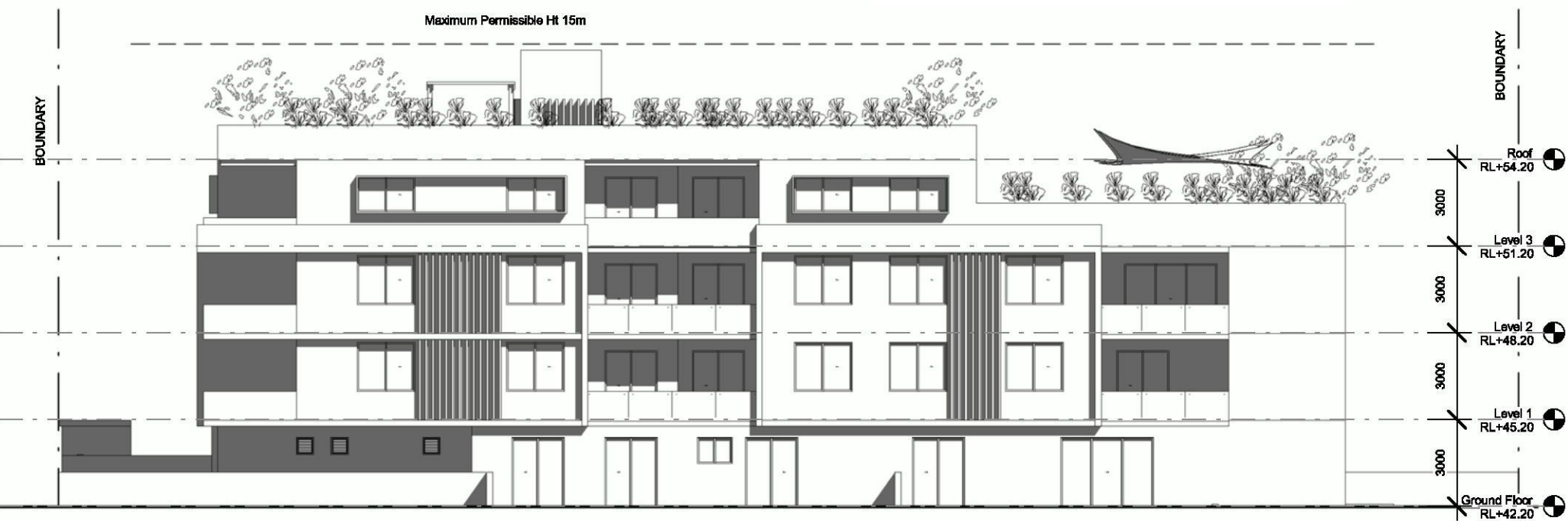
SHEET TITLE: Exterior Elevations 1/2	
SHEET NO:	DA 300
SCALE:	As indicated

DRAWN BY: MT
CHECKED BY: FG

PROJECT DETAIL: Proposed Residential Development at: 20 Robert Street, Penrith	
JOB NO: 170869	DATE: Apr 2017
LODGE AT: Penrith City Council	



1 East Elevation
1 : 200



2 West Elevation
1 : 200

BASIX Commitments

Water Commitments:

***Fixtures**

- Must install 3 Star rating showerheads in all showers. (>4.5 but <=6L/min).
- Must install 4 Star rating toilet flushing system in each toilet.
- Must install 5 Star rating taps in each kitchen.
- Must install 5 Star rating taps in each bathroom.

Energy Commitments:

***Hotwater**

- Must install a gas instantaneous 6 star.

***Cooling/ Heating System**

- Must install 5 Star (new rating) rated 1-phase air conditioning or higher to the living areas of each dwelling.

***Ventilated fridge space - Yes**

***Ventilation**

Must install ventilation systems in:

- Bathroom: individual fan, ducted to facade or roof; Operation control: manual switch on/off.
- Kitchen: individual fan, ducted to facade or roof; Operation control: manual switch on/off
- Laundry: individual fan, ducted to facade or roof; Operation control: manual switch on/off

***Fixtures**

Dishwasher - 4.5*, Clothes dryer 6*

***Lighting**

- Must provide artificial lighting in each Kitchen, all Bathrooms/ toilets, each Laundry, all Hallways.

***Other**

- Must install gas cooktop and electric oven in the kitchen of all dwellings.
- Indoor clothes drying line

Common Areas

Water Commitments:

***Fixtures**

- Must install 3 Star rating toilet flushing system in any common toilet.
- Must install 3 Star rating taps.

Energy Commitments:

***Lighting**

Must install lighting in:

- Lift cars : compact fluorescent ; Efficiency measure: connected to lift call button.
- Hallway/ Lobbies : compact fluorescent; Efficiency measure: daylight sensor and motion sensor.

***Central energy system**

- Lift : Must install gearless traction with VVVF motor : Number of Levels (Including basement) :5
- Must install a central hot water system solar gas boosted

BASIX Commitments- Common Areas (Non-Building Specific)

Water Commitments:

***Fixtures**

- Must install 3 Star rating toilet flushing system in any common toilet.
- Must install 3 Star rating taps.

Energy Commitments:

***Ventilation**

Must install ventilation in:

- Basement 1- All Buildings: Ventilation (supply + exhaust); Efficiency measure: Carbon monoxide monitor + VSD fan.
- Plant or Service Room- No Mechanical Ventilation.

***Lighting**

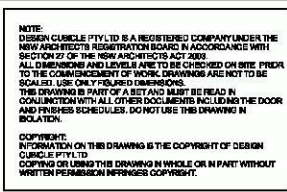
Must install lighting in:

- Basement : compact fluorescent; Efficiency measure: daylight sensors and motion sensor.
- Garbage rooms : compact fluorescent; Efficiency measure: manual on / manual off.
- Plant or Service room: compact fluorescent; Efficiency measure: manual on / manual off.

REVISIONS			
ISSUE	DESCRIPTION	DATE	BY
A	Issue for DA submission	7.9.18	MT

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PROJECT NO: 170869

SHEET TITLE:
Exterior Elevations 2/2

SHEET NO: DA 301

SCALE: As indicated

DRAWN BY:
MT

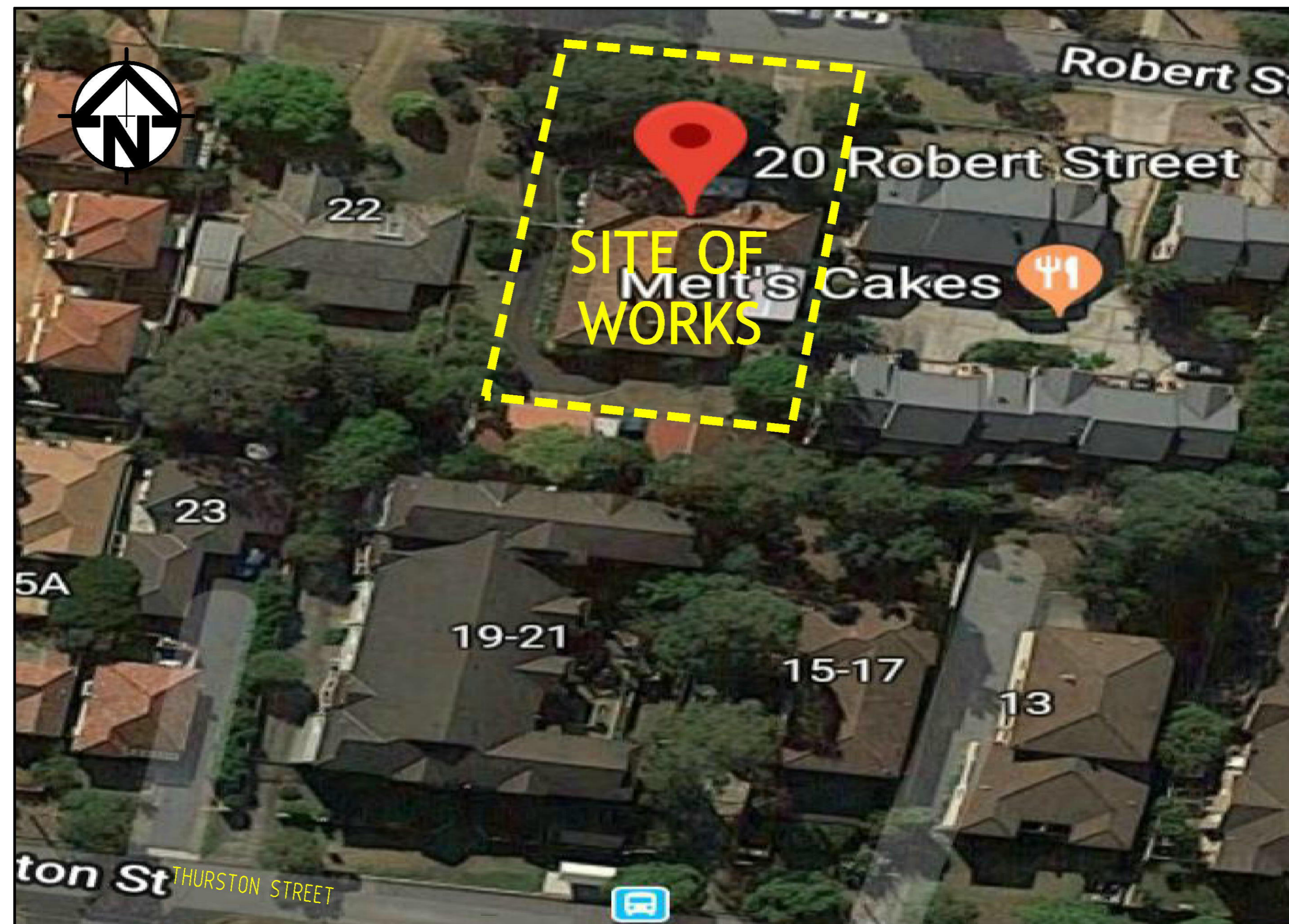
CHECKED BY:
FG

PROJECT DETAIL:
Proposed Residential Development
at: 20 Robert Street, Penrith

JOB NO: 170869 DATE: Apr 2017

LODGE AT: Penrith City Council

PROPOSED RESIDENTIAL DEVELOPMENT 20 ROBERT STREET, PENRITH STORMWATER CONCEPT DESIGN

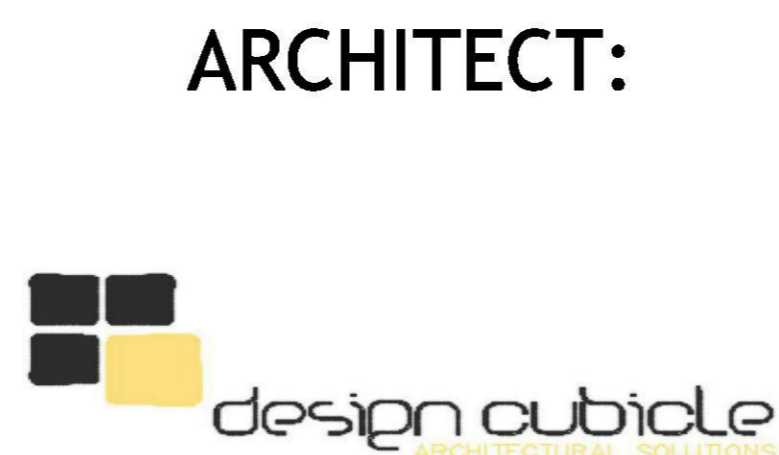


LOCALITY PLAN
NOT TO SCALE
COPYRIGHT OF GOOGLE MAP, VERSION 3

DRAWING REGISTER			
SHEET No.	No.	TITLE	REV
1	SW100	COVER SHEET	A
2	SW200	STORMWATER CONCEPT DESIGN - BASEMENT PLAN	A
3	SW201	STORMWATER CONCEPT DESIGN - GROUND FLOOR PLAN	A
4	SW202	STORMWATER CONCEPT DESIGN - ROOF PLAN	A
5	SW300	STORMWATER CONCEPT DESIGN - DETAILS SHEET	A
6	SW400	EROSION AND SEDIMENT CONTROL - PLAN AND DETAILS	A
7	SW500	STORMWATER CONCEPT DESIGN - MUSIC CATCHMENT PLAN	A



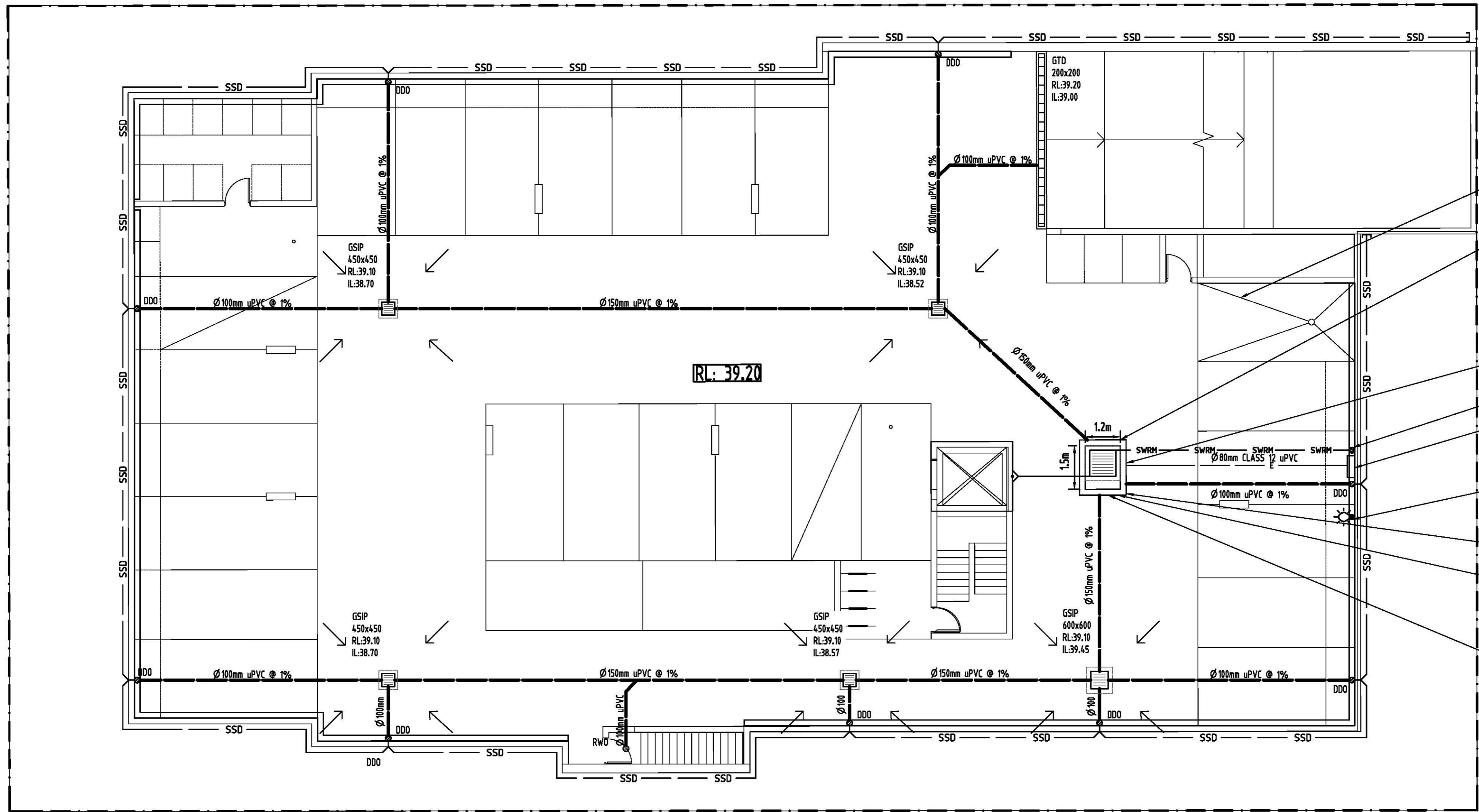
PREPARED BY:
SGC Consulting Engineers
Suite 5.03, Level 5
156 Pacific Highway
St Leonards, NSW 2065
T: +61 2 8883 4239
F: +61 2 9672 6977
Email: office@sgce.com.au
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CLIENT:

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SUBSOIL DESIGN CALCS:
 100yr 2hr ARI STORM = 41.4mm/hr
 ARI x 2 = 82.8mm
 AREA OF DRIVEWAY
 RAMP UNCOVERED = 65.86m²
 VOLUME OF RUNOFF
 V = A x d
 = 65.86 x (82.8 / 1000)
 = 5.45m³
 VOLUME PUMPED IN 30 MINUTES
 = 18m³
 WET WELL STORAGE
 MAXIMUM OF:
 * VOLUME OF RUNOFF - VOLUME PUMPED
 * 3m³
 THEREFORE, A VOLUME OF 3m³ SUBSOIL PUMP OUT PIT
 WILL BE APPLIED AS PER AUSTRALIAN STANDARD
 (AS3500).



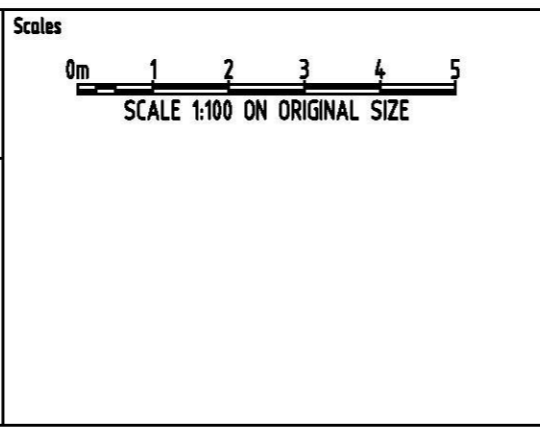
- CAR WASH BAY DRAINAGE TO BE PROVIDED BY HYDRAULIC CONSULTANT
- PUMP OUT PIT:
RL:39.10
TWL:38.80
IL:36.80
HEIGHT:2.0m
AREA:1.80m²
VOLUME REQUIRED:3.0m³
VOLUME PROVIDED:3.6m³
- INSTALL CONFINED SPACE SIGN ABOVE PUMP OUT PIT FOR PUBLIC AWARENESS AND WARNING.
- STORMWATER RISING MAIN.
- PUMP OUT PIT CONTROL BOX TO MANUFACTURERS SPECIFICATIONS.
- INSTALL WARNING FLASH LIGHT TO PROVIDE INDICATION OF PUMP FAILURE.
- INSTALL STEP IRONS. REFER TO DETAILS.
- INSTALL 2x SUBMERSIBLE PUMPS EACH WITH A PUMP CAPACITY OF 10L/s AT 7.0m HEAD, FLOAT SWITCH AND CONTROL PANEL TO MANUFACTURER'S SPECIFICATIONS. SPECIFY SABRE KS-50 OR EQUAL.
- INSTALL 900SQ HEAVY DUTY STEEL GRATED LID FOR ACCESS AND MAINTENANCE PURPOSES.



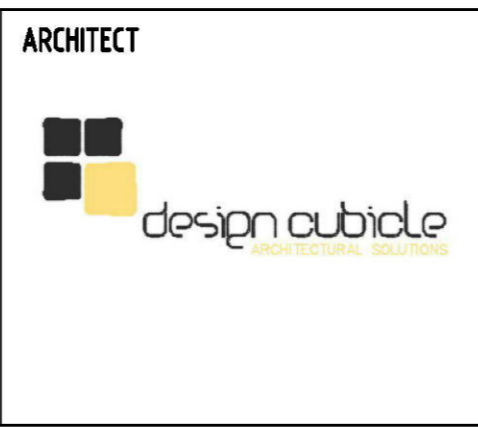
Reference Coordination Drawing			
Discipline	Drawing Title and Number	Date	Rev.
ARCH			
ARCH			
STRUCT			
MECH			
ELEC			
HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

QUALITY CONTROL			
DRAWN	FZ	DATE	26.07.18
CHECKED	SH	DATE	26.07.18
DESIGNED	FZ	DATE	26.07.18
VERIFIED	SH	DATE	26.07.18
APPROVED	SH	DATE	26.07.18

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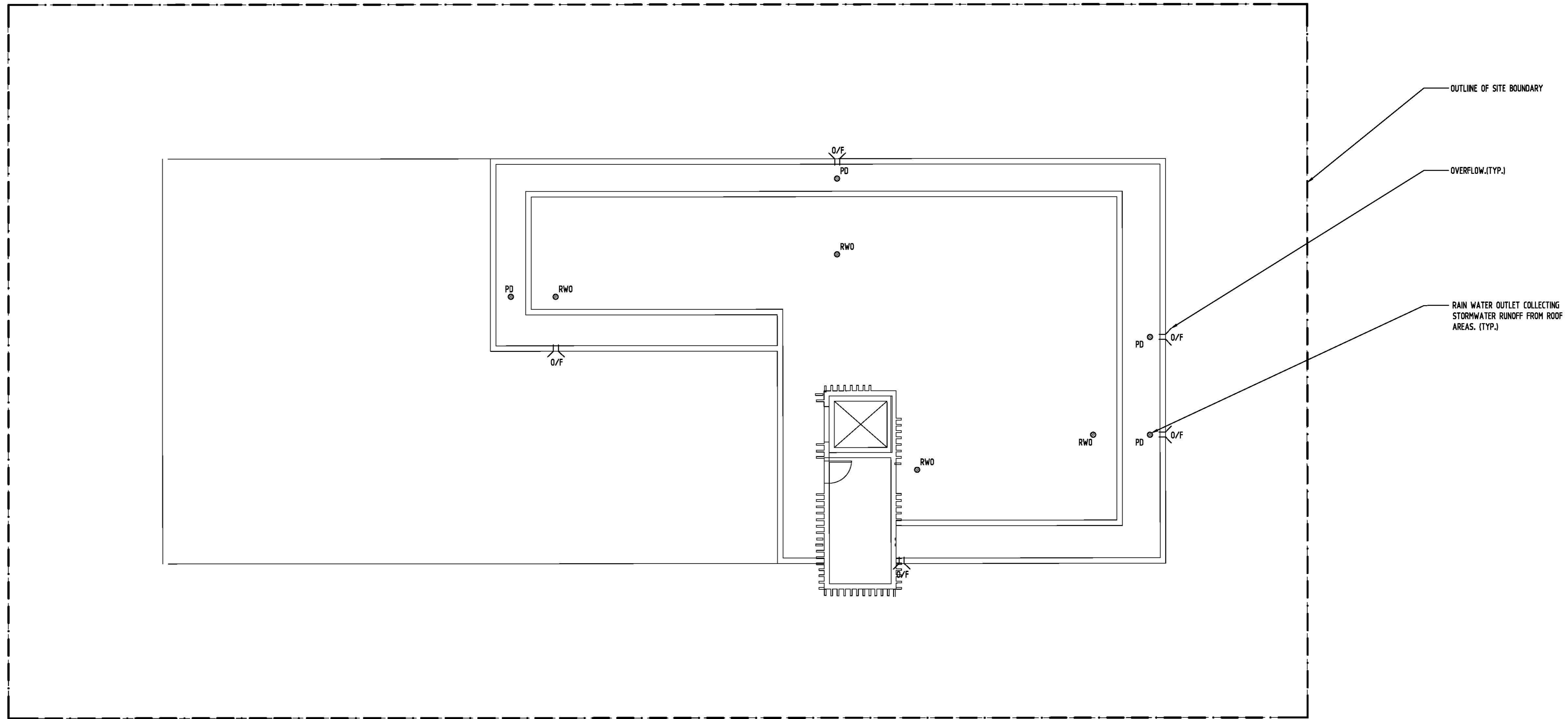


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PROJECT
PROPOSED RESIDENTIAL DEVELOPMENT
20 ROBERT STREET, PENRITH

Drawing Status	FOR APPROVAL
Drawing Title	NOT TO BE USED FOR CONSTRUCTION PURPOSES
Project No	20170210
Drawing No	SW200
Revision No	A



OUTLINE OF SITE BOUNDARY

OVERFLOW (TYP.)

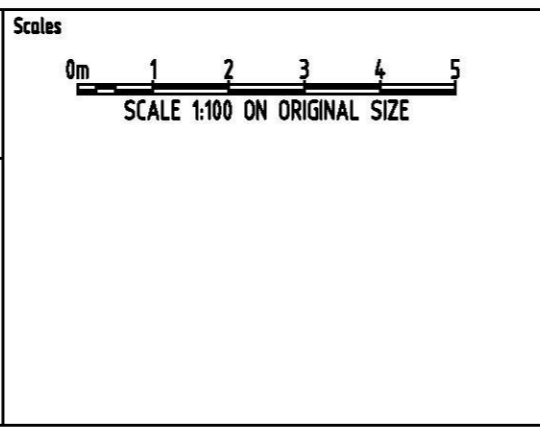
RAIN WATER OUTLET COLLECTING STORMWATER RUNOFF FROM ROOF AREAS. (TYP.)

Reference Coordination Drawing			
Discipline	Drawing Title and Number	Date	Rev.
ARCH			
ARCH			
STRUCT			
MECH			
ELEC			
HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

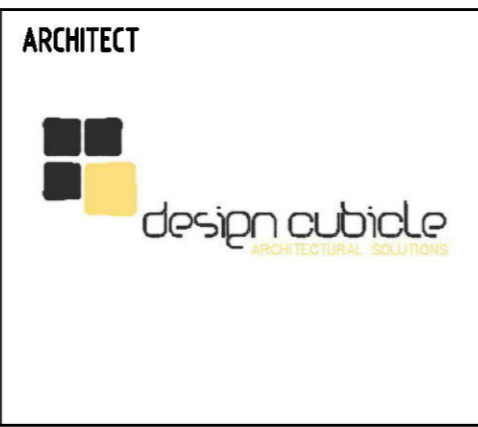
Issuer internal sequence and revision history			
Issue	Last revision title	by	Date
1	preliminary		
2	development application		
3	construction certificate		
4	tender		
5	construction		
6	other		

QUALITY CONTROL			
DRAWN	DATE	CHECKED	DATE
FZ	26.07.18	SH	26.07.18
DESIGNED	DATE 26.07.18	FZ	DATE 26.07.18
VERIFIED	DATE 26.07.18	SH	DATE 26.07.18
APPROVED	DATE 26.07.18	SH	DATE 26.07.18

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Web: www.sgce.com.au

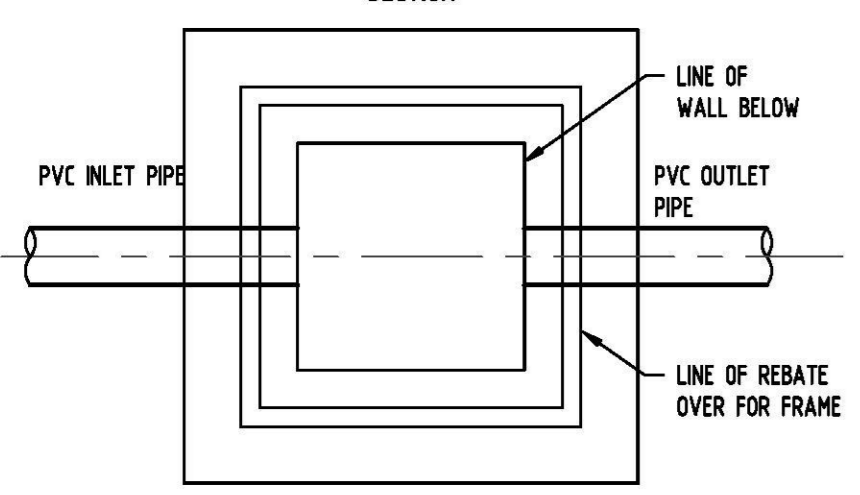
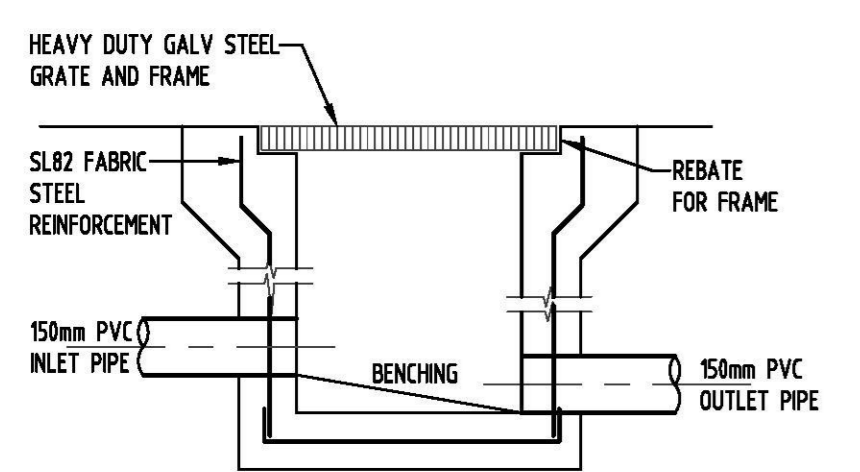
A.B.N. 21 118 222 530

PROJECT
PROPOSED RESIDENTIAL DEVELOPMENT
20 ROBERT STREET, PENRITH

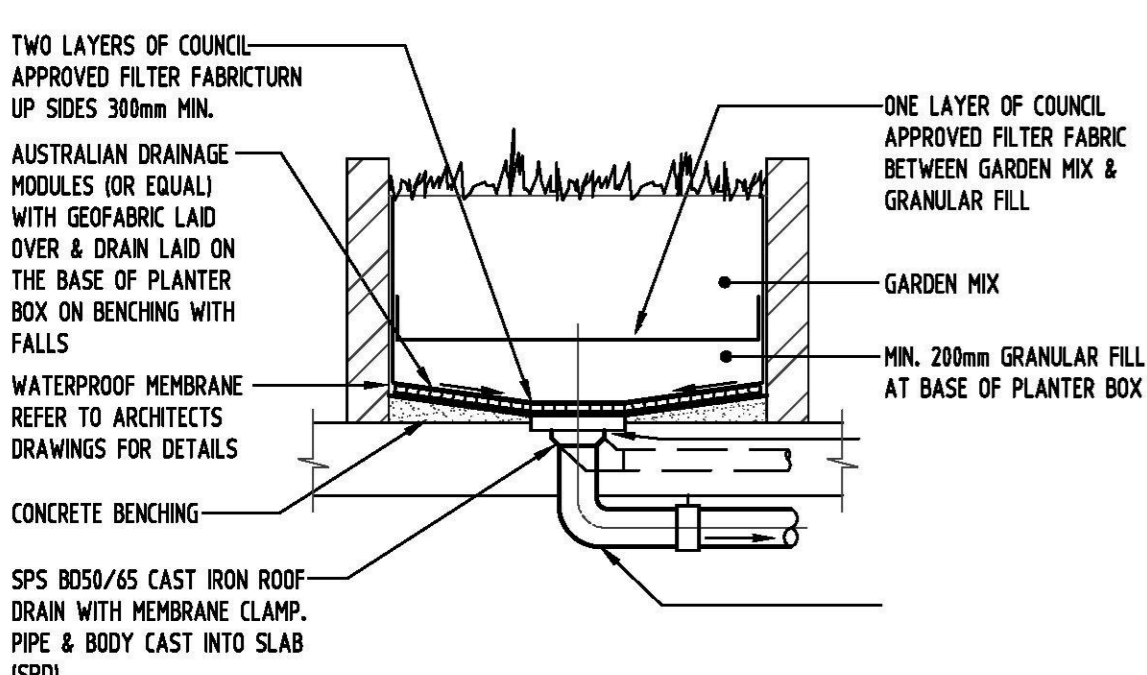
Drawing Status	FOR APPROVAL
Drawing Title	NOT TO BE USED FOR CONSTRUCTION PURPOSES
Drawing Title	STORMWATER CONCEPT DESIGN ROOF PLAN
Project No	20170210
Drawing No	SW202
Revision No	A



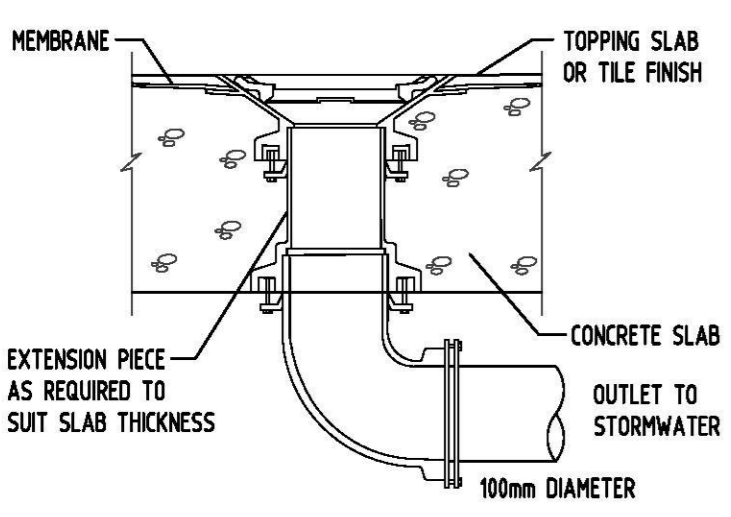
DATE PLOTTED: 28 August 2018 14:48 AM BY: SGC/MLC/A1



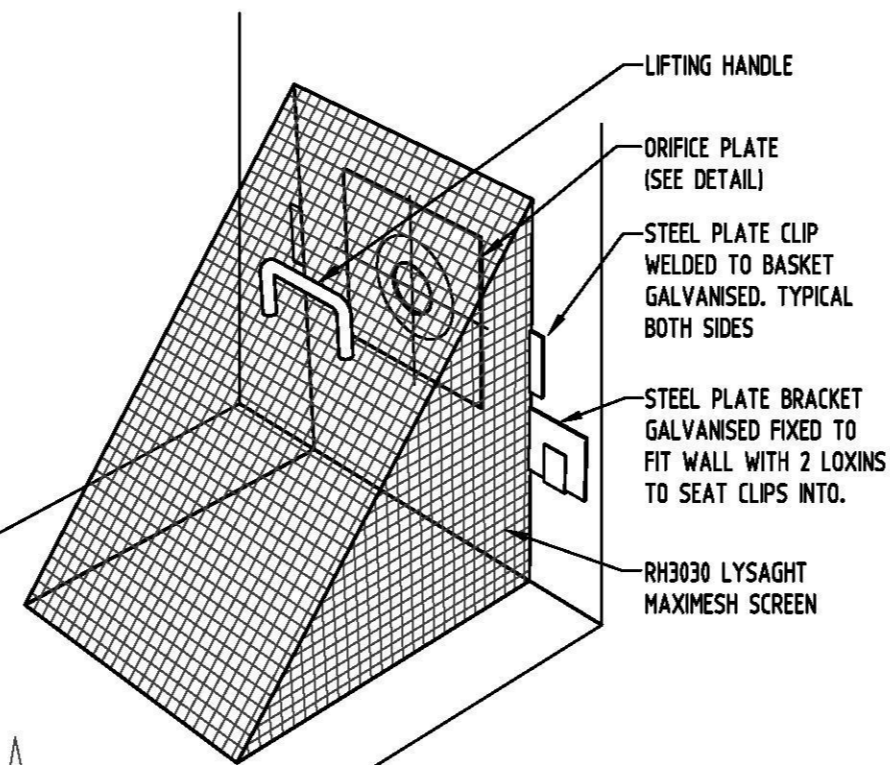
STORMWATER PIT
NOT TO SCALE



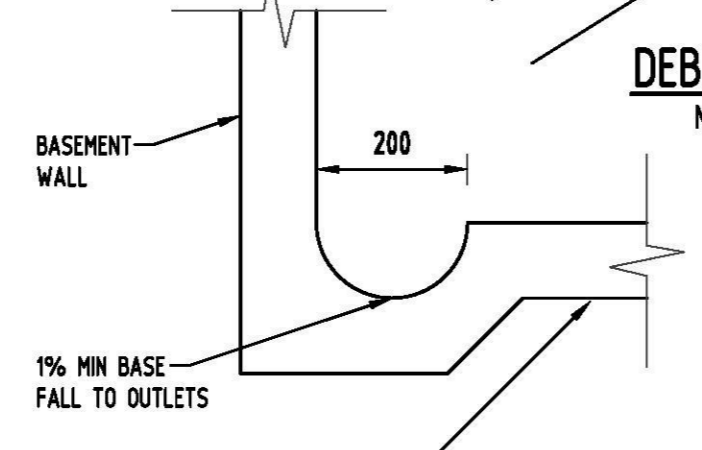
PLANTER DRAIN DETAIL
NOT TO SCALE



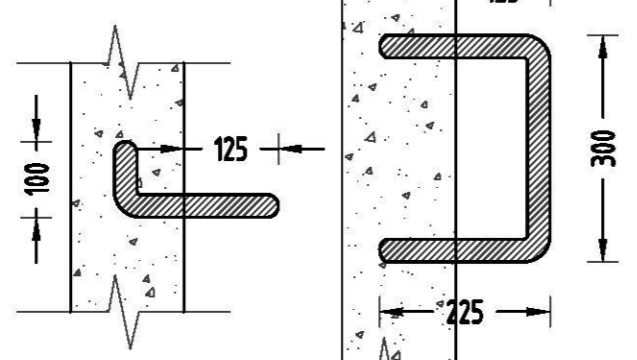
RAINWATER OUTLET
NOT TO SCALE



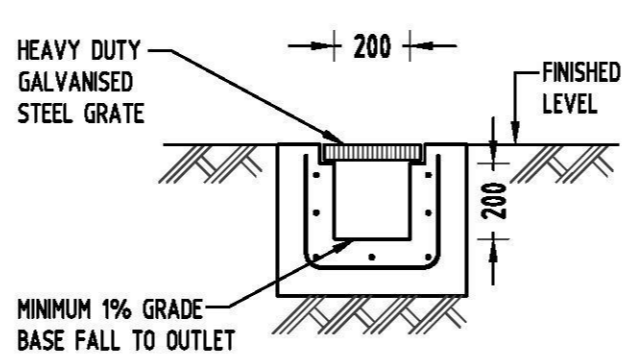
DEBRIS SCREEN
NOT TO SCALE



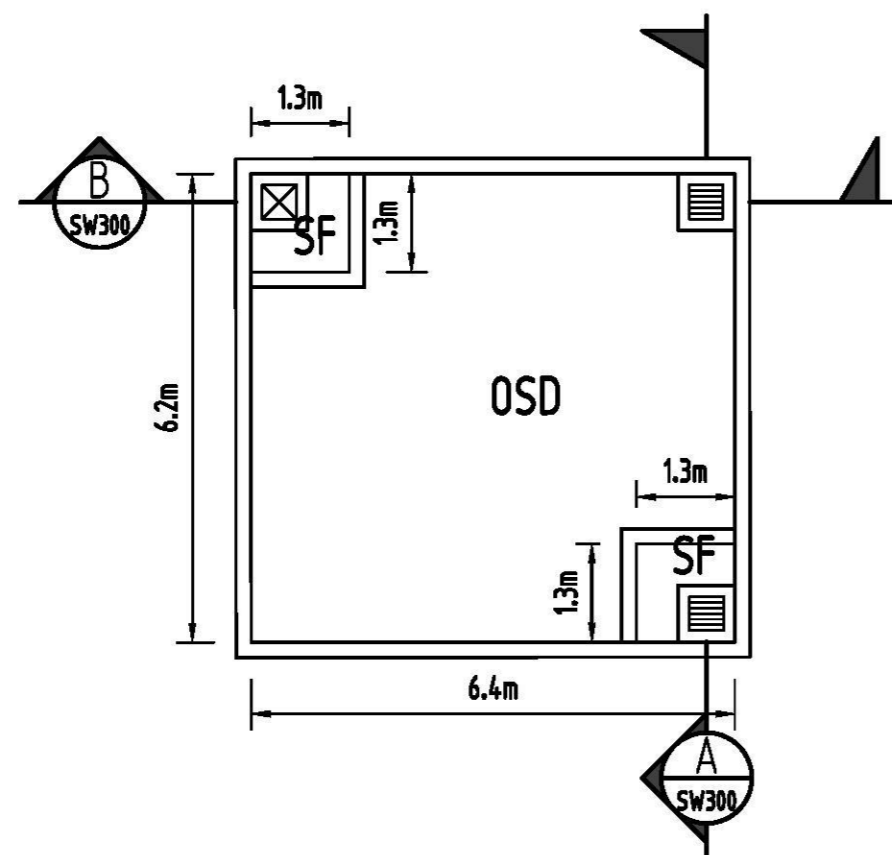
DISH DRAIN
NOT TO SCALE



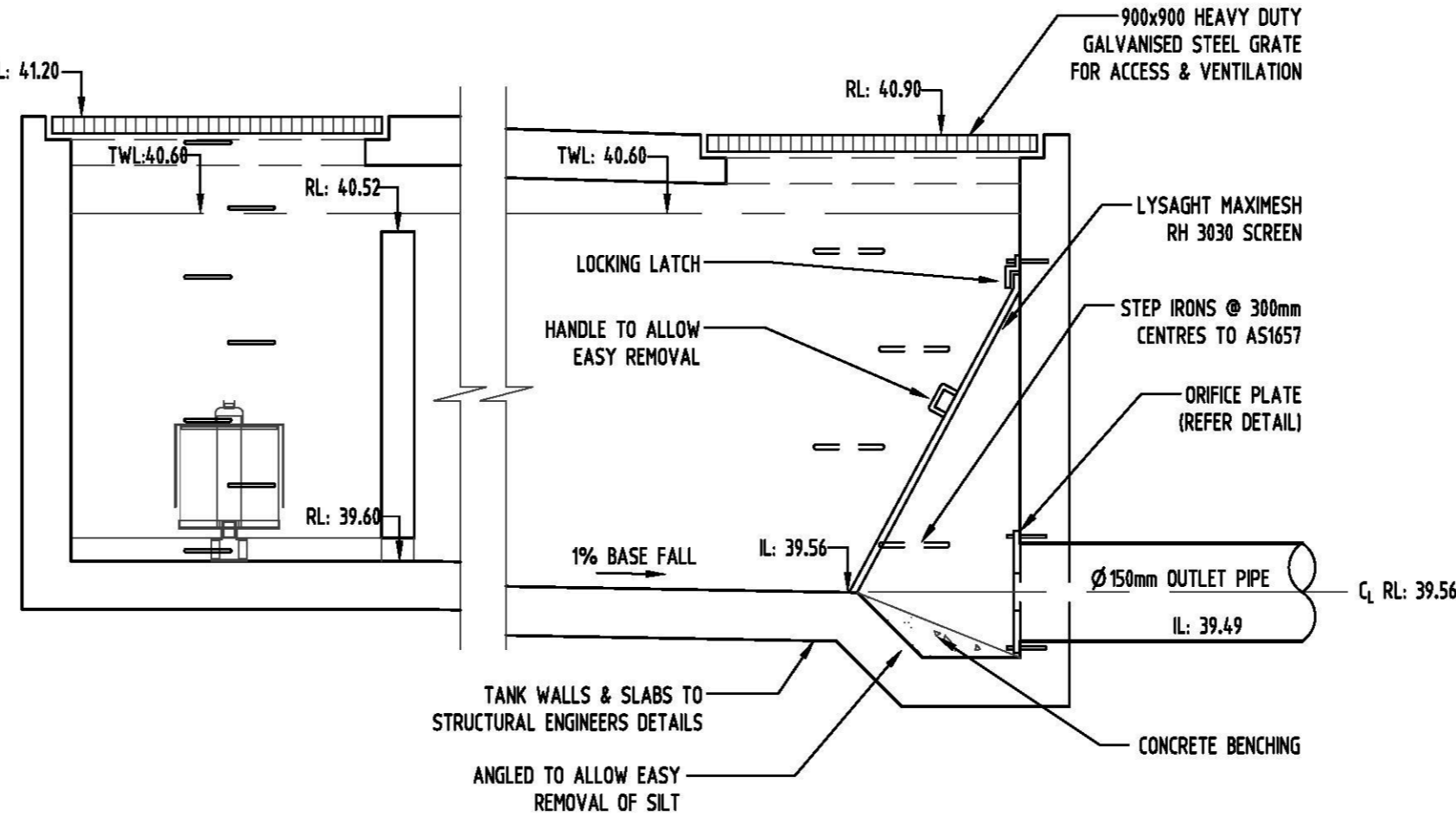
STEP IRONS
NOT TO SCALE



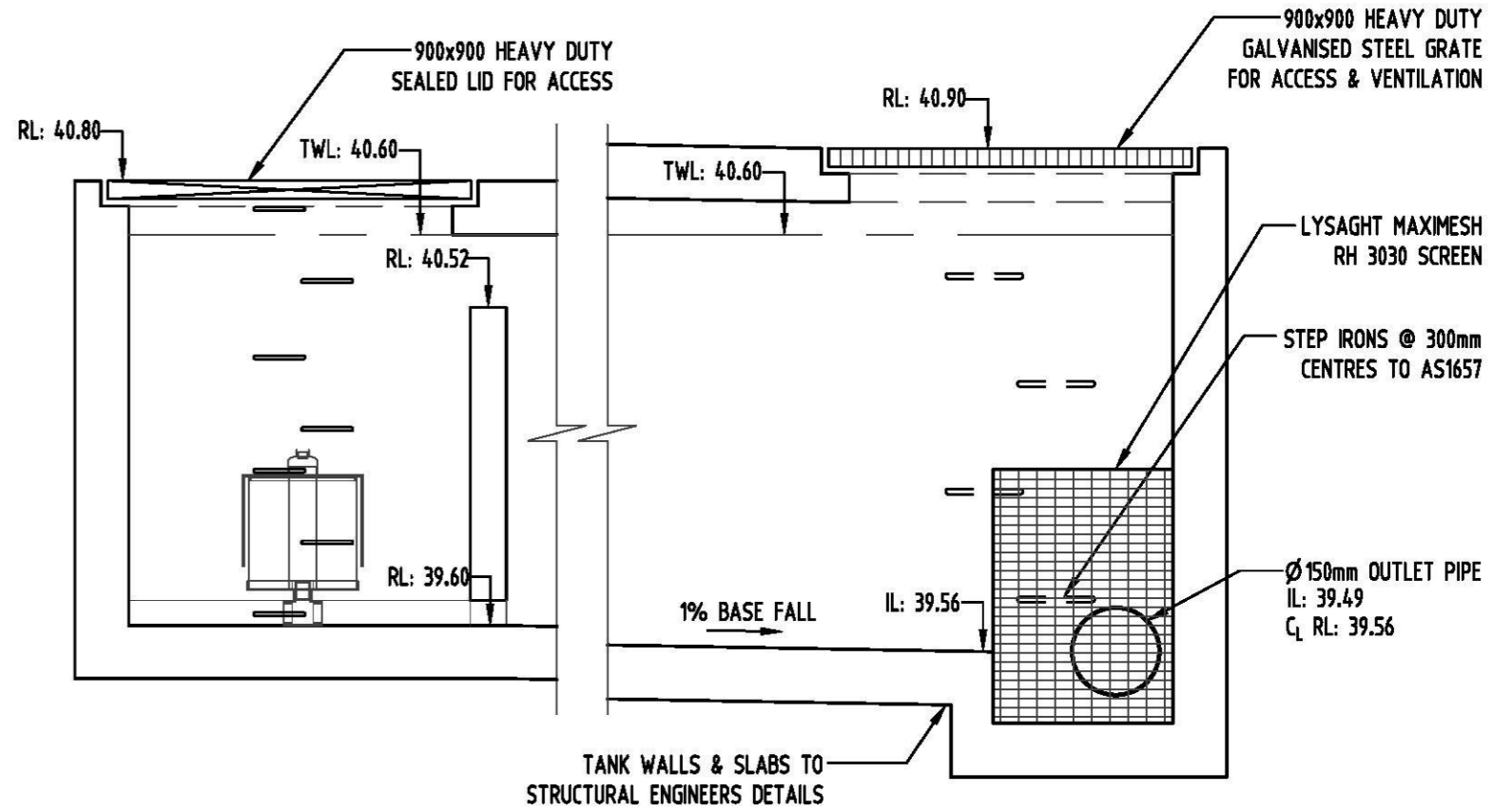
GRATED TRENCH DRAIN
NOT TO SCALE



OSD PLAN
NOT TO SCALE

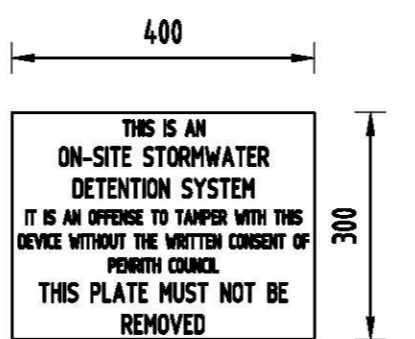


SECTION A
NOT TO SCALE

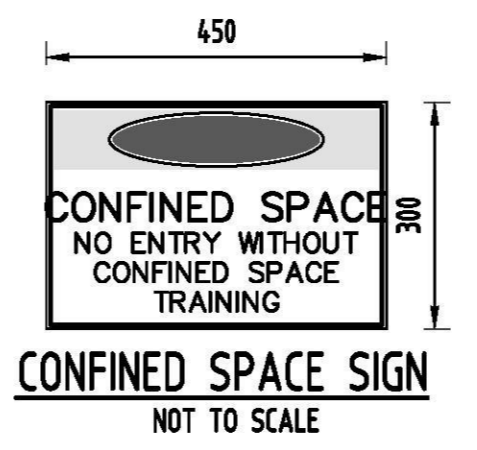


SECTION B
NOT TO SCALE

DESIGN NOTES:
THE SITE IS LOCATED IN PENRITH COUNCIL.
SITE AREA = 1400m²
OSD IS REQUIRED BECAUSE THE SITE IS IN A OSD MANDATORY AREA.
OSD WAS DESIGNED USING PSD AND SSR DATA FROM PENRITH COUNCIL'S DCP. (PSD = 120L/s/Ha, SSR = 280m²/Ha).
SITE PSD = 120x0.14 = 16.8L/s, SITE SSR = 280x0.14 = 39.2m².
MUSIC MODELLING IS REQUIRED BY COUNCIL. REQUIRED TARGETS ARE AS FOLLOWING:
TSS: 85%
TP: 60%
TN: 45%
THE SITE IS NOT FLOOD AFFECTED AS PER COUNCIL ENGINEER.

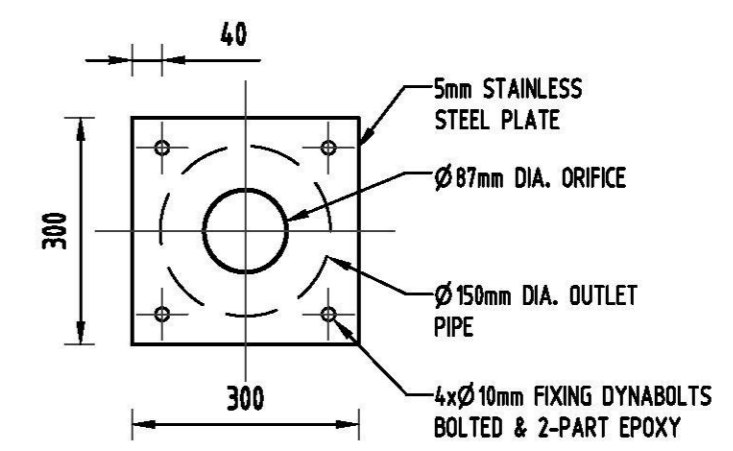


OSD SIGN
NOT TO SCALE



CONFINED SPACE SIGN
NOT TO SCALE

ORIFICE CALCULATION
FORMULA: $Q = CA\sqrt{2gh}$ WITH
 $Q = PSD = 0.120 \times 0.14 = 0.0168 \text{ m}^3/\text{s}$
 $C = 0.62$
 $A = 3.14 \times d^2/4$ (d ORIFICE DIAMETER)
 $g = 9.81 \text{ m/s}^2$
 $h = 1.06 \text{ m}$
 $d = 87 \text{ mm}$



ORIFICE PLATE
NOT TO SCALE

- LEGEND:**
- SW — STORMWATER LINE
 - SSD — SUBSOIL LINE
 - SWRM — STORMWATER RISING MAIN
 - FO — AUTHORITY FIBRE OPTIC LINE
 - W — AUTHORITY WATER LINE
 - — GRATED SURFACE INLET PIT
 - — RWO — RAINWATER OUTLET
 - — DDO — DISH DRAIN OUTLET
 - — CAP
 - — DOWNPIPE



Reference Coordination Drawing			
Discipline	Drawing Title and Number	Date	Rev.
ARCH			
ARCH			
STRUCT			
MECH			
ELEC			
HYD			
PIPE			
LANDS			
CIVIL			
SURVEY			

QUALITY CONTROL			
Discipline	Checked By	Date	Rev.
DRAWN	FZ	26.07.18	
CHECKED	SH	26.07.18	
DESIGNED	FZ	26.07.18	
VERIFIED	SH	26.07.18	
APPROVED	SH	26.07.18	

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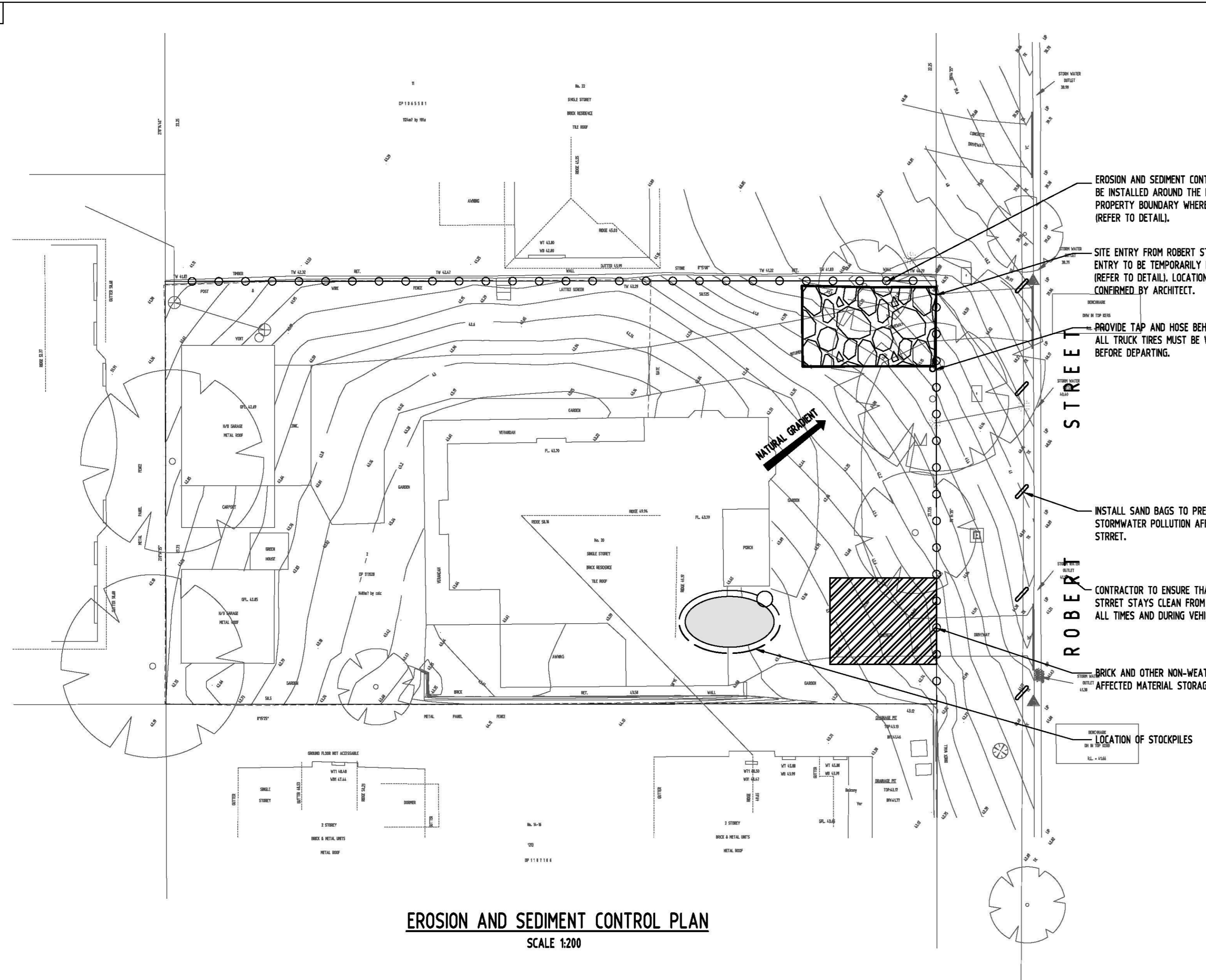
ARCHITECT
design outside

SGC
Engineering Value

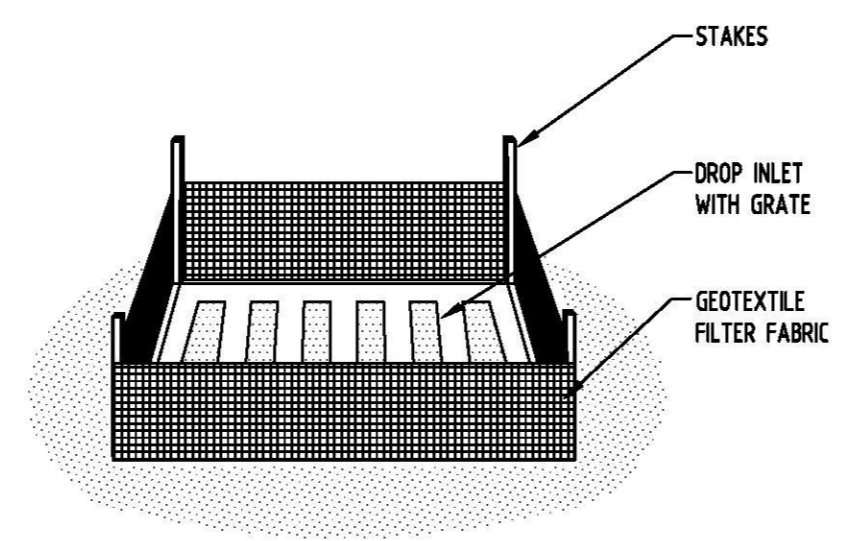
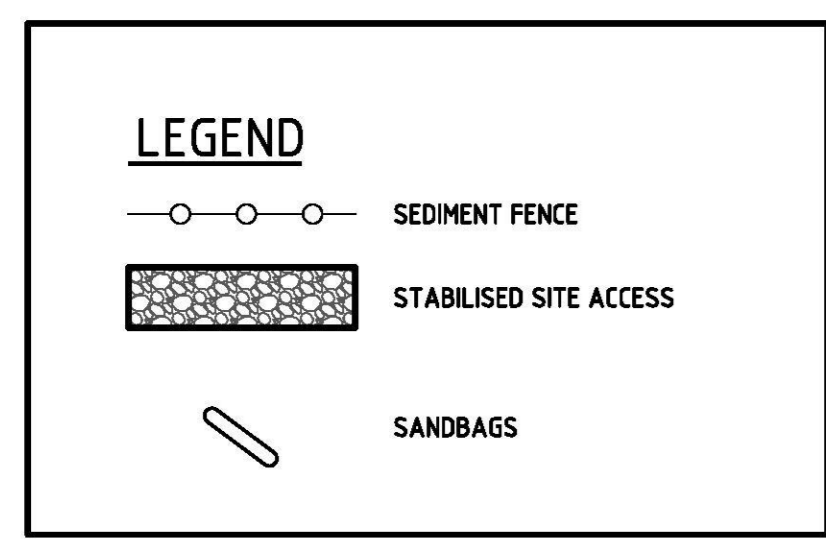
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Web: www.sgce.com.au

PROJECT
PROPOSED RESIDENTIAL DEVELOPMENT
20 ROBERT STREET, PENRITH

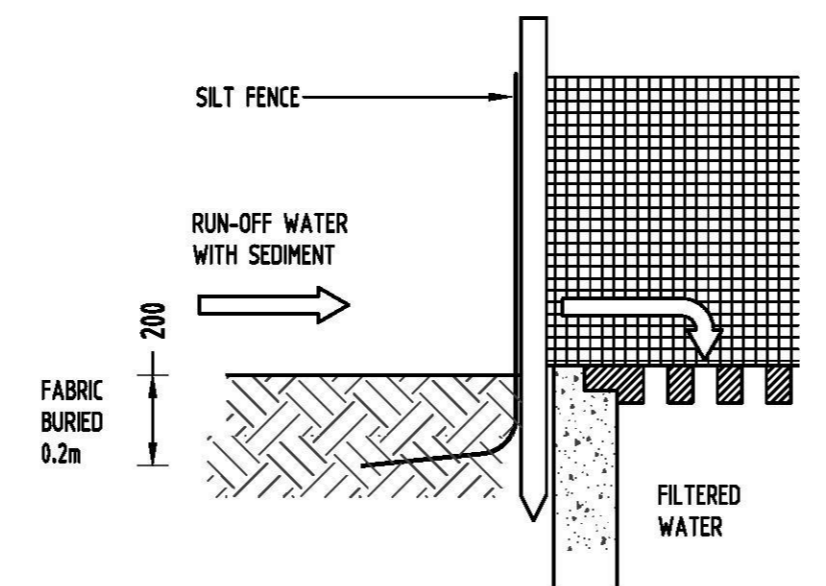
Drawing Status FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION PURPOSES		
Drawing Title STORMWATER CONCEPT DESIGN DETAILS SHEET		
Project No 20170210	Drawing No SW300	Revision No A



EROSION AND SEDIMENT CONTROL PLAN
SCALE 1:200



GEOTEXTILE INLET FILTER
NOT TO SCALE



EROSION & SEDIMENTATION CONTROL NOTES

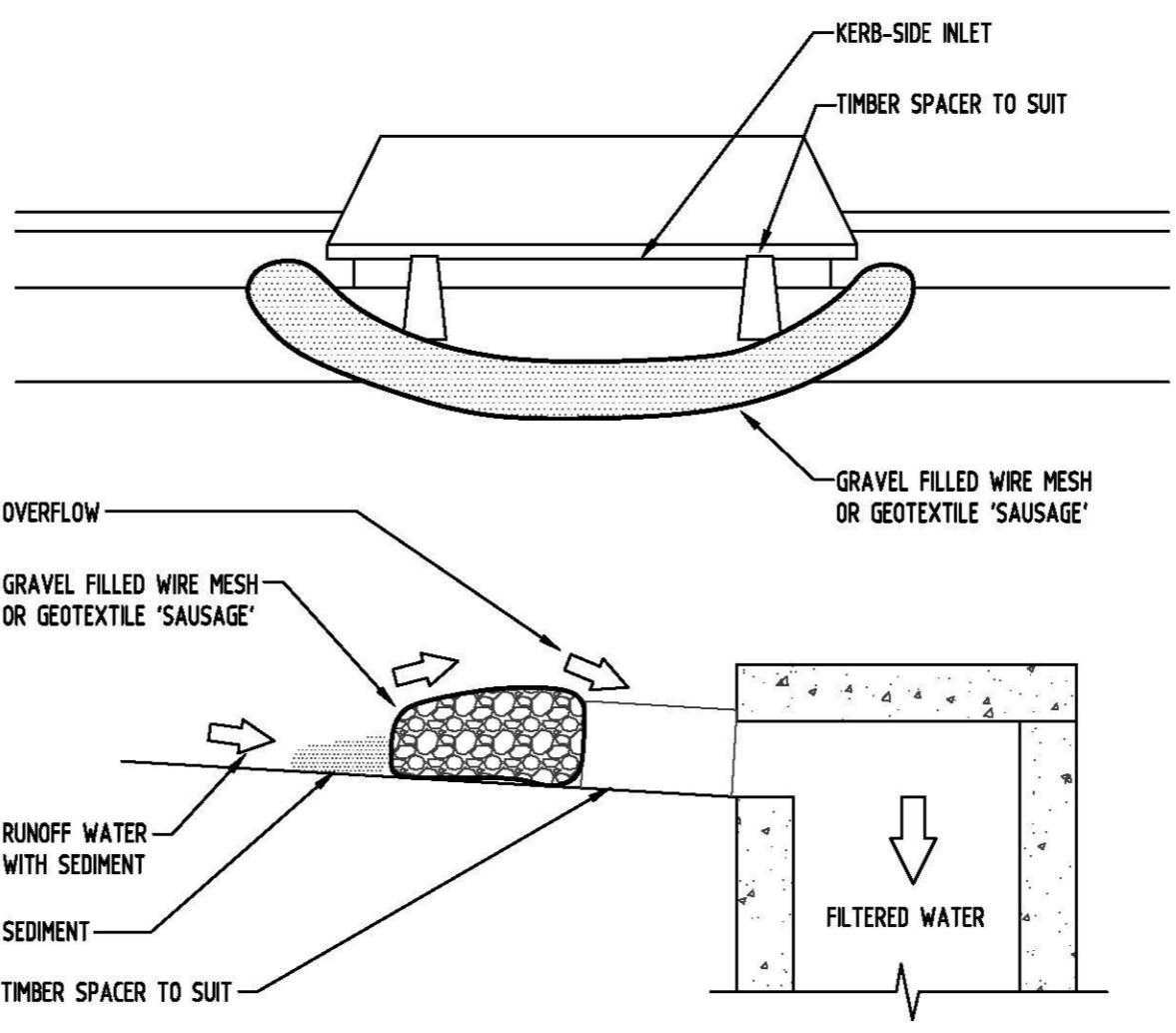
- CONTRACTOR SHALL PROVIDE SEDIMENT FENCING MATERIAL DURING CONSTRUCTION TO THE LOW SIDE OF THE WORKS. THE SEDIMENT FENCING MATERIAL TO CYCLONE WIRE SECURITY FENCE. SEDIMENT CONTROL FABRIC SHALL BE AN APPROVED MATERIAL (E.G. HJMES PROPEX SILT STOP) STANDING 300mm ABOVE GROUND & EXTENDING 150mm BELOW GROUND.
- EXISTING DRAINS LOCATED WITHIN THE SITE SHALL ALSO BE ISOLATED BY SEDIMENT FENCING MATERIAL.
- NO PARKING OR STOCKPILING OF MATERIALS IS PERMITTED ON THE LOWER SIDE OF THE SEDIMENT FENCE.
- GRASS VERGES SHALL BE MAINTAINED AS MUCH AS PRACTICAL TO PROVIDE A BUFFER ZONE TO THE CONSTRUCTION SITE.
- CONSTRUCTION ENTRY/EXIT SHALL BE VIA THE LOCATION NOTED ON THE DRAWING. CONTRACTOR SHALL ENSURE ALL DROPPABLE SOIL & SEDIMENT IS REMOVED PRIOR TO CONSTRUCTION TRAFFIC EXITING SITE. CONTRACTOR SHALL ENSURE ALL CONSTRUCTION TRAFFIC ENTERING & LEAVING THE SITE DO SO IN A FORWARD DIRECTION.

GENERAL NOTES

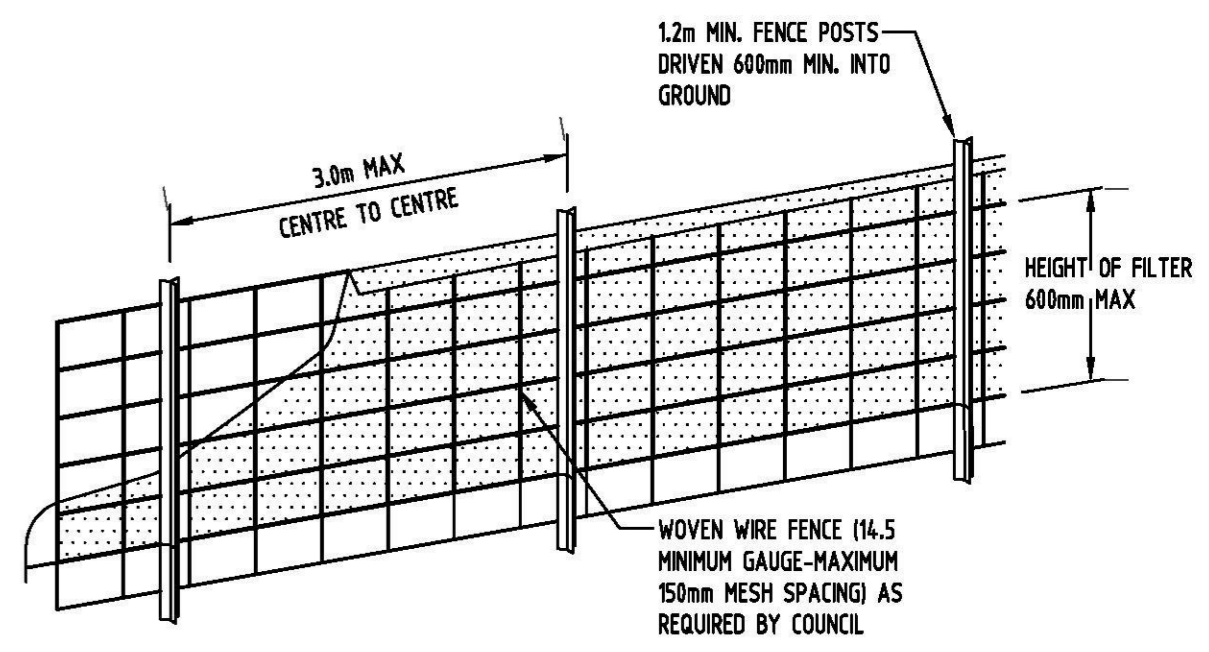
- THIS PLAN IS A CONCEPT PLAN ONLY FOR STORMWATER DISPOSAL & EROSION CONTROL. IT IS NOT SUITABLE FOR CONSTRUCTION. THIS PLAN SHOULD BE ADAPTED BY THE BUILDER DURING DEMOLITION, EXCAVATION & CONSTRUCTION PHASES TO ENSURE ADEQUATE PERFORMANCE.
- ALL DRAINAGE LAYOUT & DETAILS ARE DIAGRAMMATIC & INDICATIVE ONLY. ACTUAL LOCATION, SIZES, LEVELS & GRADES MAY ALTER WHEN DETAIL DESIGN WORKS ARE DOCUMENTED.

CLAY SOILS

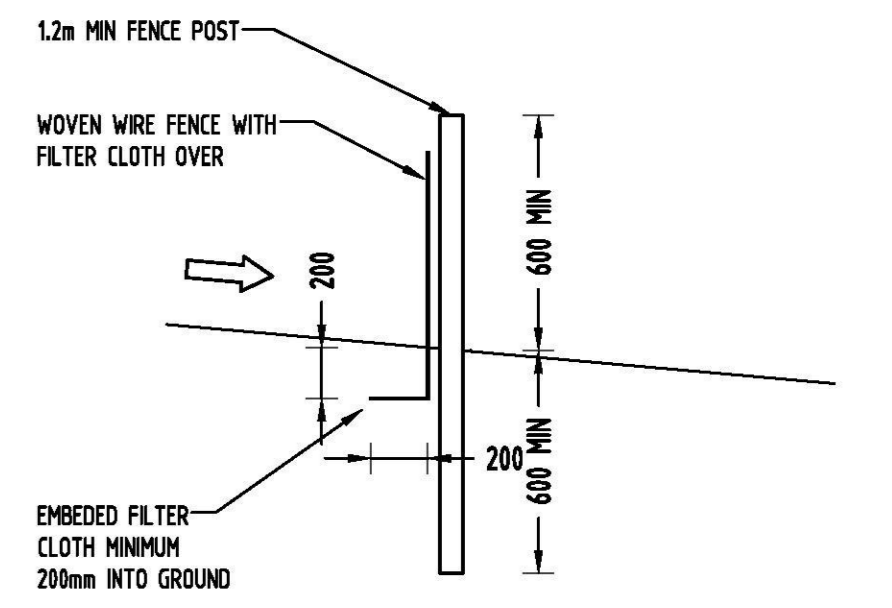
- A SYSTEM SHALL BE INSTALLED TO EITHER:
- TRANSPORT STORMWATER RUNOFF WITH SUSPENDED SOLIDS FROM SITE VIA PUMP TRUCKS.
 - TREAT THE STORMWATER RUNOFF WITH SUSPENDED SOLIDS SO THE DISCHARGE WATER QUALITY TO COUNCIL STORMWATER DRAINAGE SYSTEM HAS A MAXIMUM CONCENTRATION OF SUSPENDED SOLIDS THAT DOES NOT EXCEED 50 MILLIGRAMS PER LITRE IN ACCORDANCE WITH THE PROTECTION OF THE ENVIRONMENT OPERATION ACT (POEO 1997) AND SHALL BE APPROVED BY LOCAL COUNCIL.



GRAVEL INLET FILTER (SAUSAGE)
NOT TO SCALE



DIAGRAMMATIC VIEW

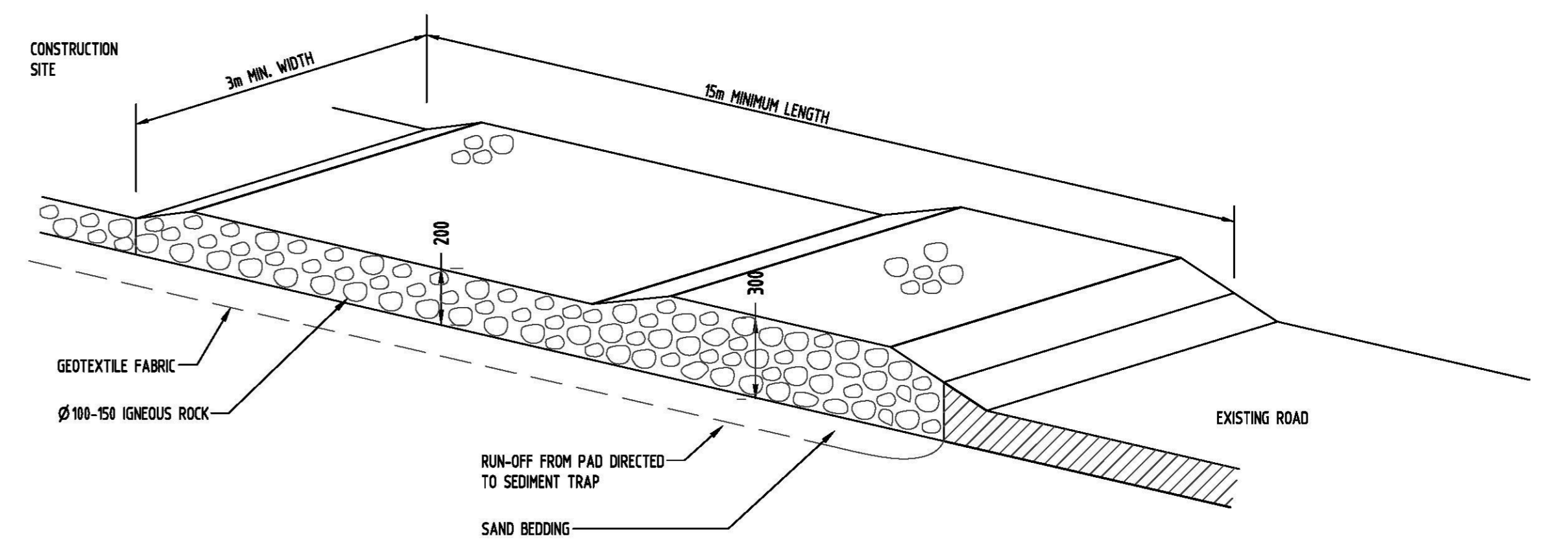


TYPICAL SECTION

SEDIMENT FENCE
NOT TO SCALE

GEOTEXTILE INLET FILTER

GEOTEXTILE INLET FILTER IS PLACED IN EVERY PIT WITHIN THE SITE TO ENSURE THE RUNOFF WATER DURING CONSTRUCTION NOT ENTER THE PITS.



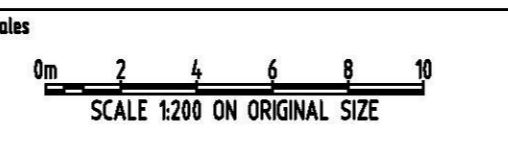
TEMPORARY CONSTRUCTION EXIT RUBBLE ALTERNATIVE
NOT TO SCALE



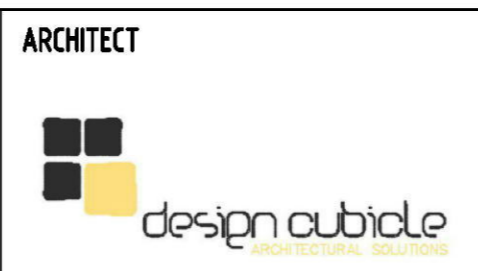
Reference Coordination Drawing			
Discipline	Drawing Title and Number	Date	Rev.
ARCH			
ARCH			
STRUCT			
MECH			
ELEC			
HYD			
PRE			
LANDS			
CIVIL			
SURVEY			

QUALITY CONTROL			
Discipline	Checked By	Date	Rev.
DRAWN	FZ	DATE 26.07.18	
CHECKED	SH	DATE 26.07.18	
DESIGNED	FZ	DATE 26.07.18	
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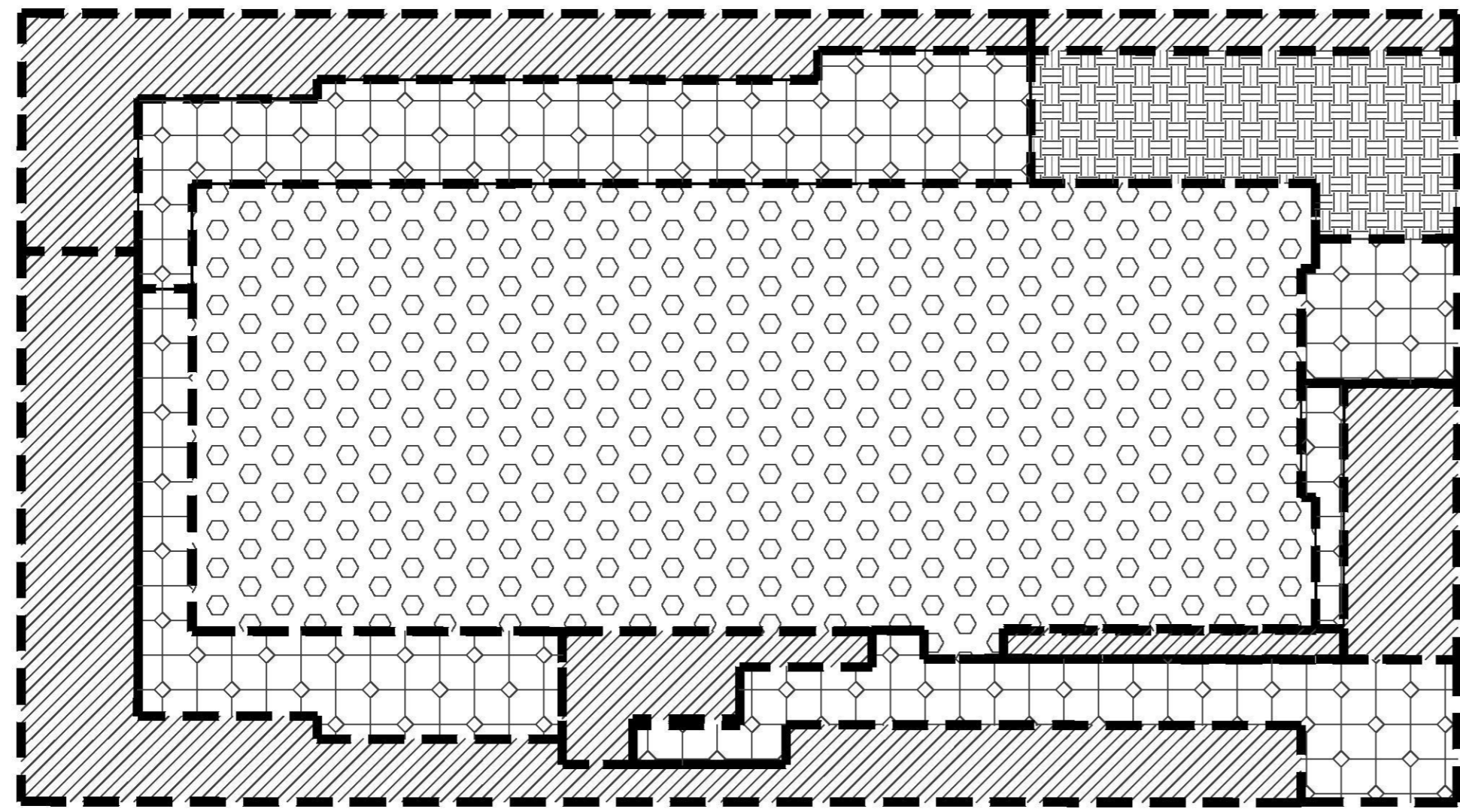
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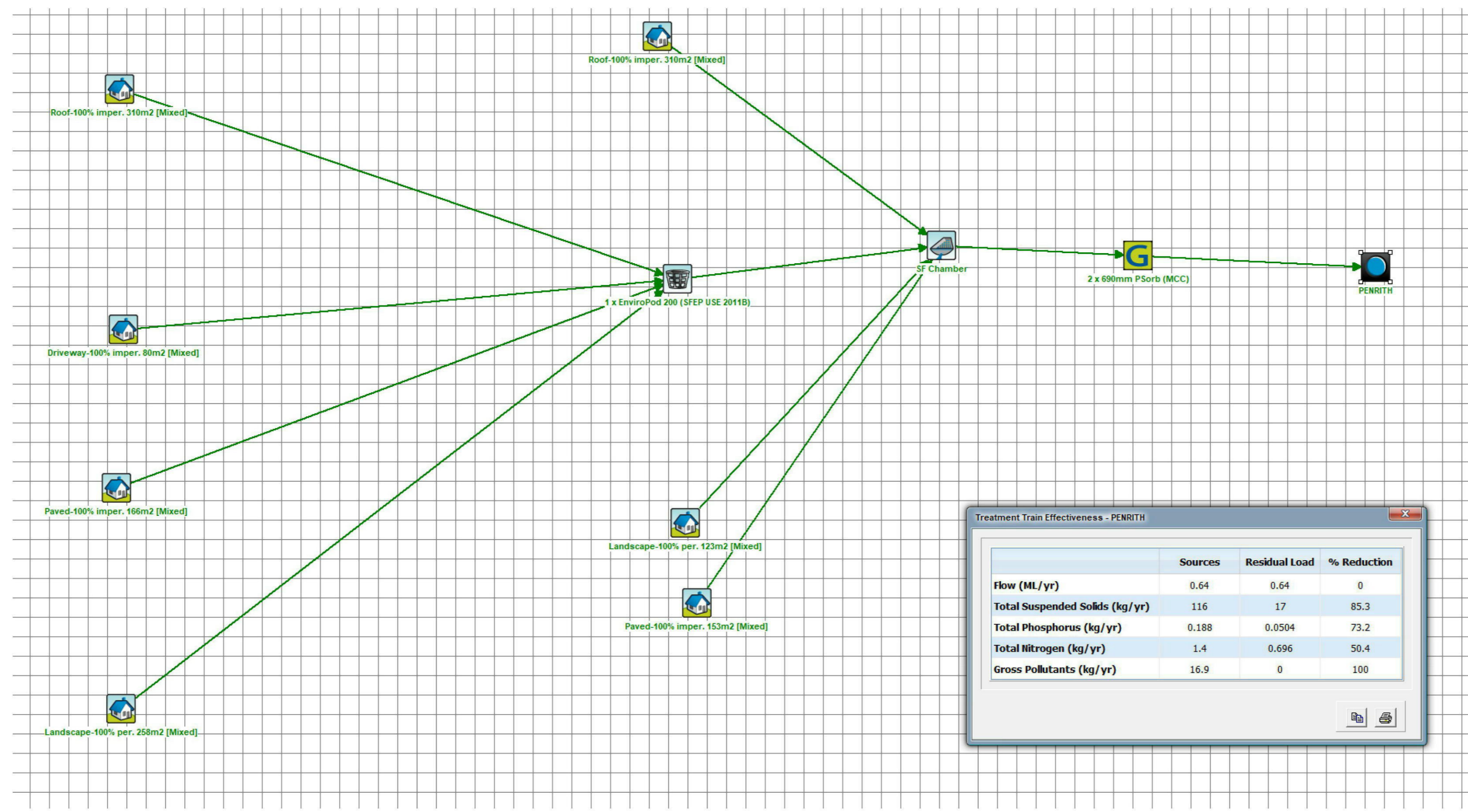
PROJECT
PROPOSED RESIDENTIAL DEVELOPMENT
20 ROBERT STREET, PENRITH

Drawing Status FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION PURPOSES		
Drawing Title EROSION AND SEDIMENT CONTROL PLAN AND DETAILS		
Project No 20170210	Drawing No SW400	Revision No A



- ROOF AREA (100% IMPERVIOUS, 610m²)**
310m² TO ENVIROPOD AND STORMWATER FILTER
310m² TO STORMWATER FILTER ONLY
- LANDSCAPE AREA (100% PERVIOUS, 381m²)**
258m² TO ENVIROPOD AND STORMWATER FILTER
123m² TO STORMWATER FILTER ONLY
- DRIVEWAY AREA TO ENVIROPOD AND STORMWATER FILTER (100% IMPERVIOUS, 80m²)**
- PAVED AREA (100% IMPERVIOUS, 319m²)**
166m² TO ENVIROPOD AND STORMWATER FILTER
153m² TO STORMWATER FILTER ONLY

MUSIC MODEL SITE AREA BREAKUP
SCALE 1:200



	Sources	Residual Load	% Reduction
Flow (ML/yr)	0.64	0.64	0
Total Suspended Solids (kg/yr)	116	17	85.3
Total Phosphorus (kg/yr)	0.188	0.0504	73.2
Total Nitrogen (kg/yr)	1.4	0.696	50.4
Gross Pollutants (kg/yr)	16.9	0	100



Discipline	Drawing Title and Number	Date	Rev.
ARCH			
ARCH			
STRUCT			
MECH			
ELEC			
HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

Discipline	Drawing Title and Number	Date	Rev.
ARCH			
ARCH			
STRUCT			
MECH			
ELEC			
HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

Discipline	Drawing Title and Number	Date	Rev.
ARCH			
ARCH			
STRUCT			
MECH			
ELEC			
HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

Discipline	Drawing Title and Number	Date	Rev.
ARCH			
ARCH			
STRUCT			
MECH			
ELEC			
HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

CLIENT
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ARCHITECT
design cubicle

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PROJECT
PROPOSED
RESIDENTIAL DEVELOPMENT
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Drawing Status	FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES	
Drawing Title	STORMWATER CONCEPT DESIGN MUSIC CATCHMENT PLAN
Project No	20170210
Drawing No	SW500
Revision No	A