DANVAS DEVELOPMENTS

13 ALEXANDRINA ROAD,
MOUNT BARKER
S.A. 5251

DRIVEWAY ELEVATION LOOKING NORTH

MOUNT BARKER DISTRICT COUNCIL

Planning Consent

AMENDMENTS			
Rev	Date	Description	Drawn
A	08.05.25	Concept Design	C.I.
B	22.05.25	Planning Issue	C.I.
C	29.07.25	Council RFI	C.I.

D A N V A S
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ACN.619578675 ABN. 49186294008002

SUITE 1 / 159 PORT ROAD
HINDMARSH SA 5007
T: 8338 2211 F: 83382188

PROJECT
PROPOSED RESIDENTIAL DEVELOPMENT
AT:
13 ALEXANDRINA ROAD, MOUNT BARKER

CLIENT
DANVAS DEVELOPMENTS PTY. LTD.

DRAWN: CI
DATE: MAY. 2025
SCALE: AS SHOWN
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PROJECT No.: 25.2025
SHEET No.: PA 01 OF 07

FRONT ELEVATION TO STREET

DRIVEWAY ELEVATION LOOKING SOUTH

MOUNT BARKER DISTRICT COUNCIL

Planning Consent

AMENDMENTS

Rev	Date	Description	Drawn
A	08.05.25	Concept Design	C.I.
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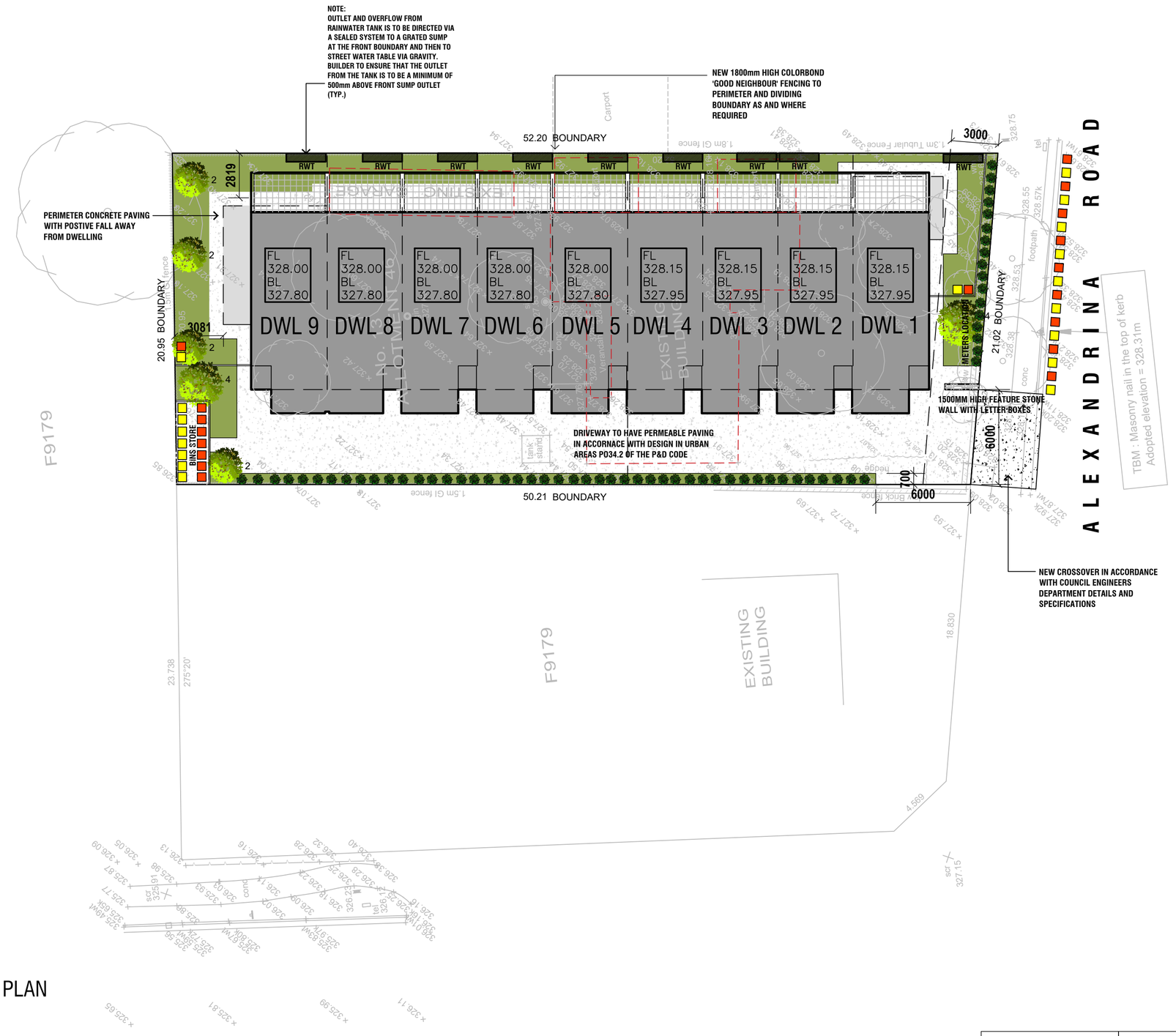
FOR PLANNING ASSESSMENT

MOUNT BARKER DISTRICT COUNCIL

Planning Consent

CONSTRUCTION MATERIALS:

- POWER PANEL CONSTRUCTION TO UPPER AND LOWER;
- FINISHES AS SHOWN
- COLORBOND ROOF ON 2° PITCH WHERE SHOWN
- ALUMINIUM WINDOWS AND DOORS
- CONCRETE SLAB
- SELECTED PAVING TO AROUND DWELLING AND DRIVEWAY



SITE / LANDSCAPING PLAN

SCALE 1:200

STORMWATER TO BE IN ACCORDANCE WITH ENGINEERS DETAILS & RECOMMENDATIONS AND DIRECTED TO STREET WATER TABLE IN 90MM Ø PVC STORMWATER PIPE

SITE STORMWATER DRAINAGE WILL BE CONSTRUCTED IN ACCORDANCE WITH AS/NZS 3500.3 – 2018 INCLUDING:
• PROVIDE SUMPS WITH OVERFLOWS TO FRONT BOX GUTTERS

LANDSCAPING:

1
Common Name: Bournda Beauty Wax Flower
Plant Height: 1
Plant Spread: 1

2
Common Name: James Stirling Pittosporum
Plant Height: 3
Plant Spread: 1.5

3
Common Name: Narrow Leaf Chalk Sticks
Plant Height: 0.4
Plant Spread: 1.2

4
Common Name: Orange Berry
Plant Height: 4
Plant Spread: 2

AMENDMENTS			
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A	08.05.25	Concept Design	C.I.
B	22.05.25	Planning Issue	C.I.
C	29.07.25	Council RFI	C.I.

D1 AREA :		D2-8 AREA :		D9 AREA :		SUMMARY	
LOWER LIVING	47.10	LOWER LIVING	36.38	LOWER LIVING	47.79	SITE	1072.68 SQ.M.
UPPER LIVING	59.68	UPPER LIVING	58.69	UPPER LIVING	59.26	SITE COVER	48.94 %
GARAGE	19.50	GARAGE	19.50	GARAGE	19.41	SOFT L.SACPE	18.02 %
BALCONY	12.02	BALCONY	11.87	BALCONY	12.02		
PORCH	1.90	PORCH	1.82	PORCH	1.90		
TOTAL	140.20 SQ.M.	TOTAL	128.26 SQ.M.	TOTAL	140.38 SQ.M.		

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PROJECT
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DANVAS DEVELOPMENTS PTY. LTD.

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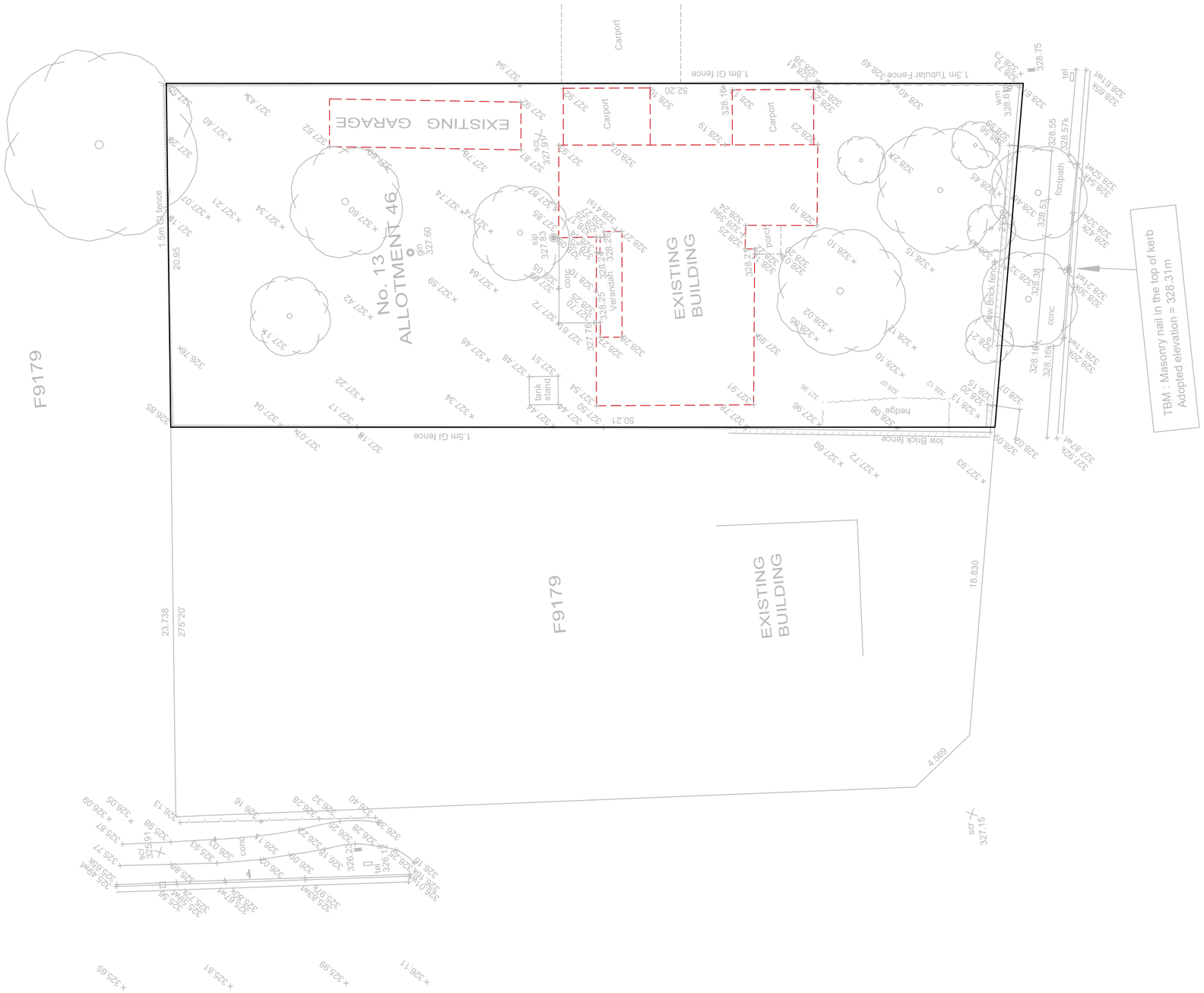
PROJECT No. 25.2025
SHEET No. PA 03 OF 07

FOR PLANNING ASSESSMENT

MOUNT BARKER DISTRICT COUNCIL

Planning Consent



SITE PLAN

SCALE 1:200

AMENDMENTS			
Rev	Date	Description	Drawn
A	08.05.25	Concept Design	C.I.
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C	29.07.25	Council RFI	C.I.

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PROJECT
AT: PROPOSED RESIDENTIAL DEVELOPMENT
13 ALEXANDRINA ROAD, MOUNT BARKER

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25.2025	PA 04 OF 07

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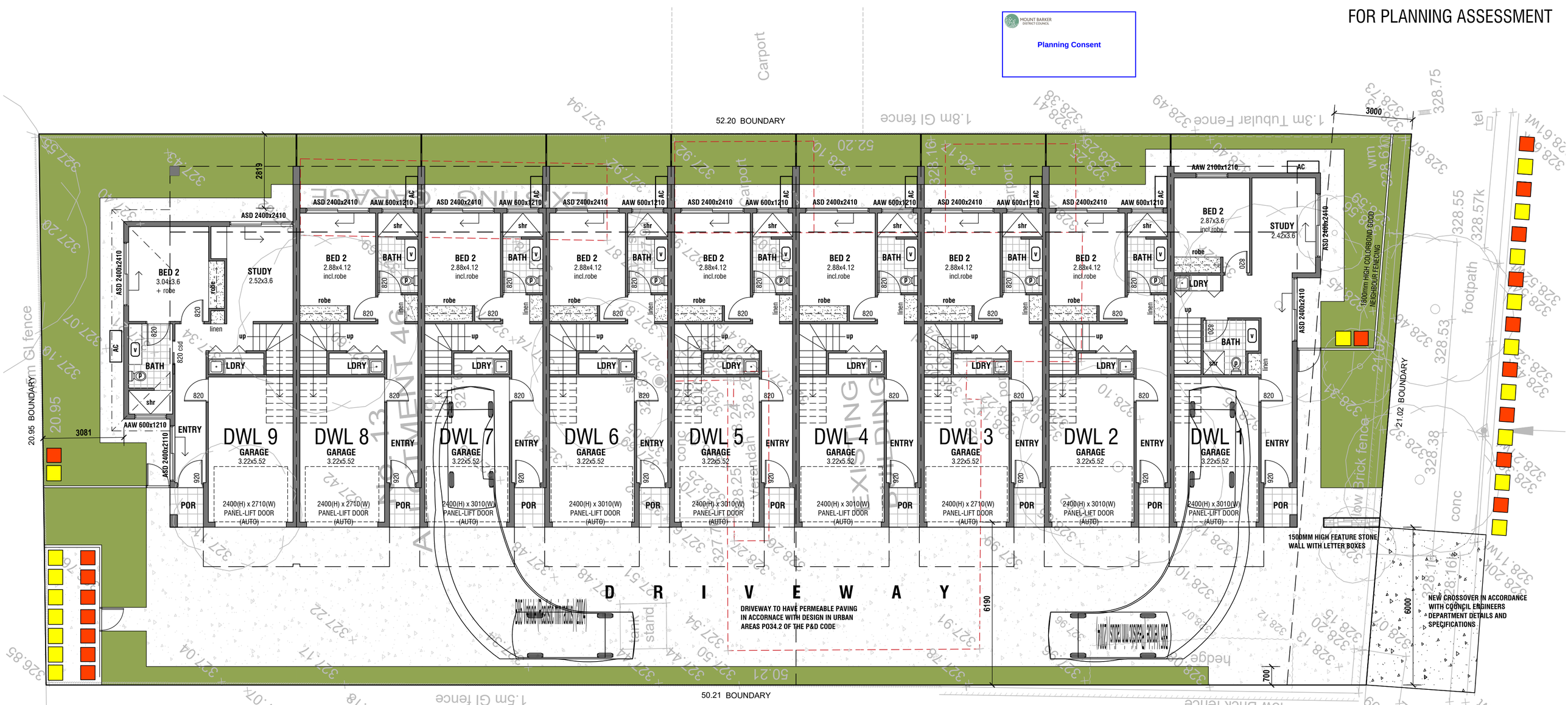

GROUND FLOOR / SITE PLAN

SCALE 1:100 @ A2

D1 AREA :		D2-8 AREA :		D9 AREA :		SUMMARY	
LOWER LIVING	47.10	LOWER LIVING	36.38	LOWER LIVING	47.79	SITE	1072.68 SQ.M.
UPPER LIVING	59.68	UPPER LIVING	58.69	UPPER LIVING	59.26	SITE COVER	48.94 %
GARAGE	19.50	GARAGE	19.50	GARAGE	19.41	SOFT L.SACPE	18.02 %
BALCONY	12.02	BALCONY	11.87	BALCONY	12.02		
PORCH	1.90	PORCH	1.82	PORCH	1.90		
TOTAL	140.20 SQ.M.	TOTAL	128.26 SQ.M.	TOTAL	140.38 SQ.M.		

AMENDMENTS

Rev	Date	Description	Drawn
A	08.05.25	Concept Design	C.I.
B	22.05.25	Planning Issue	C.I.
C	29.07.25	Council RFI	C.I.

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PROJECT
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SHEET No. PA 05 OF 07

MOUNT BARKER DISTRICT COUNCIL

Planning Consent

UPPER FLOOR PLAN

SCALE 1:100 @ A2

D1 AREA :		D2-8 AREA :		D9 AREA :		SUMMARY	
LOWER LIVING	47.10	LOWER LIVING	36.38	LOWER LIVING	47.79	SITE	1072.68 SQ.M.
UPPER LIVING	59.68	UPPER LIVING	58.69	UPPER LIVING	59.26	SITE COVER	48.94 %
GARAGE	19.50	GARAGE	19.50	GARAGE	19.41	SOFT L.SACPE	18.02 %
BALCONY	12.02	BALCONY	11.87	BALCONY	12.02		
PORCH	1.90	PORCH	1.82	PORCH	1.90		
TOTAL	140.20 SQ.M.	TOTAL	128.26 SQ.M.	TOTAL	140.38 SQ.M.		

AMENDMENTS

Rev	Date	Description	Drawn
A	08.05.25	Concept Design	C.I.
B	22.05.25	Planning Issue	C.I.
C	29.07.25	Council RFI	C.I.

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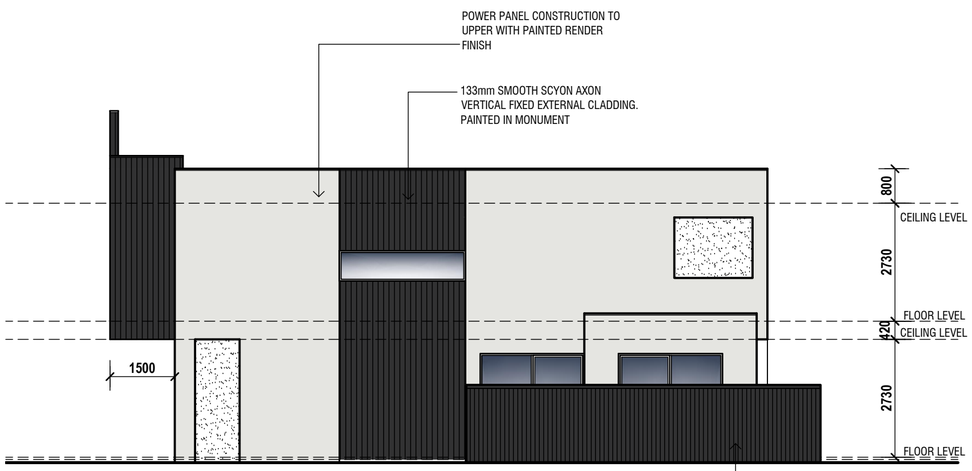
DRIVEWAY ELEVATION (WESTERN)

SCALE 1:100 @ A2

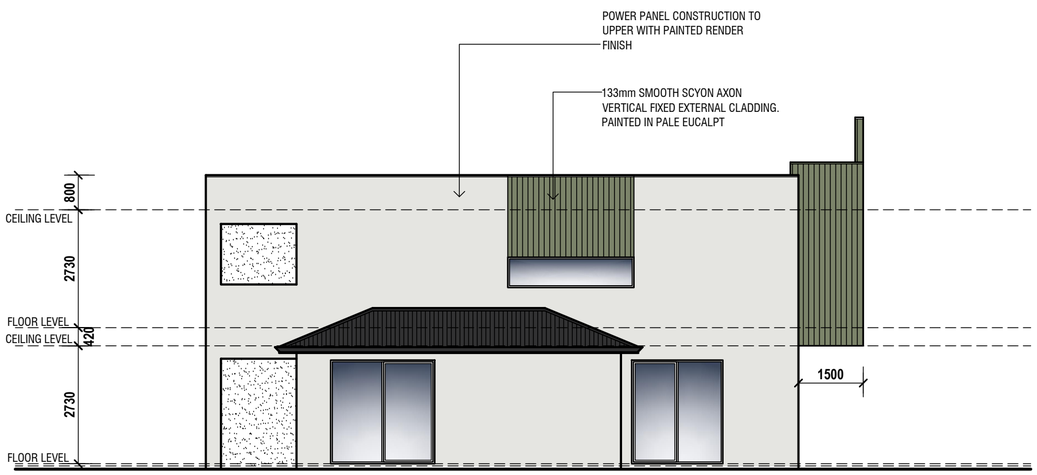
EASTERN ELEVATION

SCALE 1:100 @ A2



ELEVATION TO ALEXANDRINA ROAD (SOUTHERN)

SCALE 1:100 @ A2



NORTHERN ELEVATION

SCALE 1:100 @ A2

MOUNT BARKER DISTRICT COUNCIL

Planning Consent

AMENDMENTS			
Rev	Date	Description	Drawn
A	08.05.25	Concept Design	C.I.
B	22.05.25	Planning Issue	C.I.
C	29.07.25	Council RFI	C.I.

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PROJECT
PROPOSED RESIDENTIAL DEVELOPMENT

AT:
13 ALEXANDRINA ROAD, MOUNT BARKER

CLIENT
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DRAWN	DATE
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AS SHOWN	
PROJECT No.	SHEET No.
25.2025	PA 07 OF 07

NOTES

1. This is an engineering survey only and should not be used as a boundary identification survey.
2. Owner to peg site prior to construction
3. All surplus soil to be removed by owner.
4. Stormwater, retaining walls & perimeter paving by owner. Stormwater and perimeter paving to be fully installed within 6 months of handover.
5. Cover to stormwater pipes in areas of vehicular traffic to be 300mm elsewhere 150mm.
6. ~~This site is classified as Class Flexible connections are necessary for all stormwater and sewer pipes.~~
7. For construction at or near boundary care must be taken to ensure stability of adjacent structures. Refer to Engineer if in doubt.
8. All stormwater disposal to satisfy Council's requirements.
9. The sewer run shown on this plan is indicative only. It is shown to determine whether sewer piers are required. Underfloor plumbing to be constructed as per Australian standards. Falls to be checked by builder prior to construction.

DENOTES A 4,000L RAINWATER/FRWT TANK TO CAPTURE 100% OF ROOF STORMWATER WITH 1,000L USABLE STORAGE CELL **PLUMBED TO A TOILET AND EITHER THE LAUNDRY COLD WATER OUTLETS OR HOT WATER SERVICE** & 1,000L ACTING AS A DETENTION TANK WITH A Ø25mm ORIFICE & **2,000L ACTING AS A FIRE FIGHTING TANK (FRWT)** (NON COMBUSTIBLE FIREFIGHTING CELL TO BE FULL AT ALL TIMES). DISCHARGE OUTLET TO BE A MIN 500mm ABOVE STREET WATER TABLE. ALL PIPES CONNECTING TO TANK TO BE A SEALED SYSTEM. REFER TO DT1 & SDS.

NOTE: ROOF DOWNPIPES MARKED 'PDP' TO BE DISCHARGED TO 4,000L RAINWATER/FRWT TANK VIA A SEALED SYSTEM (REFER TO 'SDS'). ALLOW TANK OVERFLOW TO STREET. ALL SURFACE STORMWATER TO BE DISCHARGED DIRECTLY TO SUMP/PUMP VIA A GRAVITY SYSTEM.

LEGEND

- paving - refer PV1
- Permeable paving
- x99.05 existing spot levels
- existing contours
- design batter 1 : 2 (u.n.o.)
- retaining wall as specified
- 100mm wide grated trench
- spoon drain & direction of flow
- Ø90 upvc stormwater pipe, min fall 1:200
- Ø90 upvc stormwater pipe (Sealed system)
- sewer pipe, min fall 1:60

- Borehole
- WM Water meter
- Sewer IP
- Telstra
- ETSA
- Block pegs

FL	design finished floor level
BL	design bench level
WT	design watertable level
DL	design ground / paving level
TRW	design top of retaining wall level
RWH	design retaining wall height

DP selected downpipe PDP PVC downpipe

450 x 450 grated sump (u.n.o) Grated inlet 150 DIA

NOTE: THE RAINWATER TANK AND DOWNPIPE LOCATIONS SHOWN ON THIS DRAWING ARE INDICATIVE ONLY (REFER TO THE ARCHITECTURAL DRAWING). LOCATION MAY BE ALTERED BY BUILDER/OWNER TO SUIT PROVIDING THAT MINIMUM FALLS ARE ACHIEVED.

PROVIDE CONCRETE PLINTH TO BOUNDARY AS REQUIRED. MAX HEIGHT = 0.30m

Provide retaining wall/plinth along the front boundary, with a minimum 100mm above the adjacent kerb level, for flood protection purposes.

NEW RETAINING WALL BY OWNER. REFER TO RW2.

NEW RETAINING WALL BY OWNER. REFER TO RW1.

NOTE: EXISTING CROSSOVER TO BE REINSTATED TO A VERTICAL KERB AS PER COUNCIL SPECIFICATIONS.

TBM : Masonry nail in the top of kerb
Adopted elevation = 328.31m

NOTE: EXTEND EXISTING CROSSOVER TO SUIT AS PER COUNCIL SPECIFICATIONS. (REFER TO SD 225)

PUMP PIPE AS PER MANUFACTURES SPECIFICATIONS. DRAWN FOR CLARITY

NOTE: Overland flows are directed towards the sump/pump to ensure proper drainage and to prevent nuisance flows to neighbouring developments.

PROVIDE PUMP TO SATISFY:

TOP LEVEL: **327.65**
FLOW RATE: **3.00L/sec**

EMERGENCY DETENTION VOLUME: **4000L**
(ALL PUMPS TO BE INSTALLED AS PER MOUNT BARKER DISTRICT COUNCIL MANAGEMENT PLAN). PUMP OUT TO STREET WATERTABLE (PIPE OMITTED FOR CLARITY).

NOTE: Two pumps shall be provided, each capable of the design flow rate. The pumps shall be configured to automatically alternate as the duty pump. The system shall be configured to automatically revert to the alternate pump should the duty pump fail. An Audible Alarm system must be provided

NOTE: ALL 450x450 SUMP IN DRIVEWAY TO BE INSTALLED WITH ECOSOL LITTER BASKET + 200 MICRON FILTER BAG TO IMPROVE WATER QUALITY. (TYP)

PROVIDE CONCRETE PLINTH TO BOUNDARY AS REQUIRED. MAX HEIGHT = 0.30m

600 Sq SUMP
328.30 TOP
327.95 INV (OUT)

STROMWATER CONNECTION THROUGH THE ROAD VERGE AREA TO BE CONSTRUCTED OF SHAPE AND MATERIAL: STEEL 125x100x2mm INSTALL ORIFICE PLATE TO RESTRICT OUTFLOW TO 6.10L/s (COUNCIL'S REQUIREMENT)

*NOTE : CONTOUR LINES INTERPOLATED THROUGH STRUCTURES ARE INDICATIVE ONLY
note: this is not a boundary survey :– boundary plotted is purely indicative
SURVEYED BY STATE SURVEYS: MAR'25

0 1 2 4 6 8 10M

TEK engineers

TEK ENGINEERS
Consulting Engineers
A.B.N. 51 491 784 923
No.7 Joann Street
Athelstone, SA 5076
Telephone: 0403 193 096

MOUNT BARKER DISTRICT COUNCIL
Planning Consent

SPECTRA

FOR: DANVAS DEVELOPMENTS
13 ALEXANDRINA ROAD
MOUNT BARKER

SITE & DRAINAGE PLAN

Revision :

'A': 18/07/25: PUMP/SUMP AMENDED (KB)

Drawn : SH

Design : KB

Date : MAY'25

Scale : 1:200

Attachment : 17810

Sheet Number : SD1/A

NOTES

1. This is an engineering survey only and should not be used as a boundary identification survey.
2. Owner to peg site prior to construction
3. All surplus soil to be removed by owner.
4. Stormwater, retaining walls & perimeter paving by owner. Stormwater and perimeter paving to be fully installed within 6 months of handover.
5. Cover to stormwater pipes in areas of vehicular traffic to be 300mm elsewhere 150mm.
6. ~~This site is classified as Class Flexible connections are necessary for all stormwater and sewer pipes.~~
7. For construction at or near boundary care must be taken to ensure stability of adjacent structures. Refer to Engineer if in doubt.
8. All stormwater disposal to satisfy Council's requirements.
9. The sewer run shown on this plan is indicative only. It is shown to determine whether sewer piers are required. Underfloor plumbing to be constructed as per Australian standards. Falls to be checked by builder prior to construction.

LEGEND

- paving - refer SRP
- x99.05 existing spot levels
- existing contours
- design batter 1 : 2 (u.n.o.)
- retaining wall as specified
- 100mm wide grated trench
- spoon drain & direction of flow
- Ø90 upvc stormwater pipe, min fall 1:200
- FFL 99.04 Ø90 upvc stormwater pipe (Sealed system)
- sewer pipe, min fall 1:60

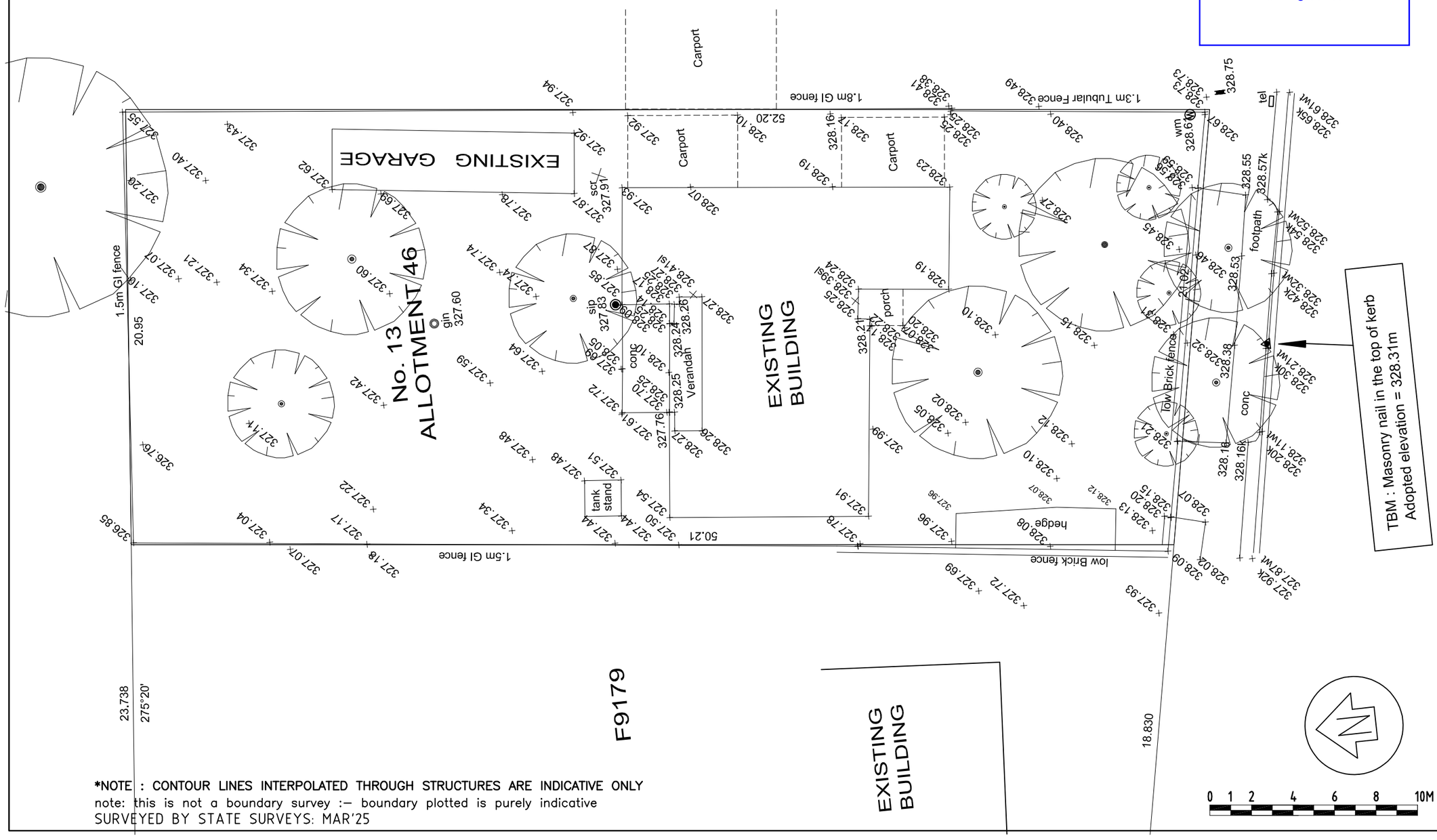
Borehole	FL	design finished floor level	
WM Water meter	BL	design bench level	
Sewer IP	WT	design watertable level	
Telstra	DL	design ground / paving level	
ETSA	TRW	design top of retaining wall level	
Block pegs	RWH	design retaining wall height	

DP selected downpipe PDP PVC downpipe

300 x 300 grated sump (u.n.o) Grated inlet 150 DIA

MOUNT BARKER DISTRICT COUNCIL

Planning Consent



*NOTE : CONTOUR LINES INTERPOLATED THROUGH STRUCTURES ARE INDICATIVE ONLY
note: this is not a boundary survey :– boundary plotted is purely indicative
SURVEYED BY STATE SURVEYS: MAR'25

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SPECTRA

FOR: DANVAS DEVELOPMENTS
13 ALEXANDRINA ROAD
MOUNT BARKER

ENGINEERING SURVEY

Revision :

Drawn : SH

Design : SH

Date : MAY'25

Scale : 1:200

Attachment : 17810

Sheet Number : ES

TEK ENGINEERS
Consulting Engineers

Job:	17810
Design:	K.B.
Date:	July'25
Page:	SW1

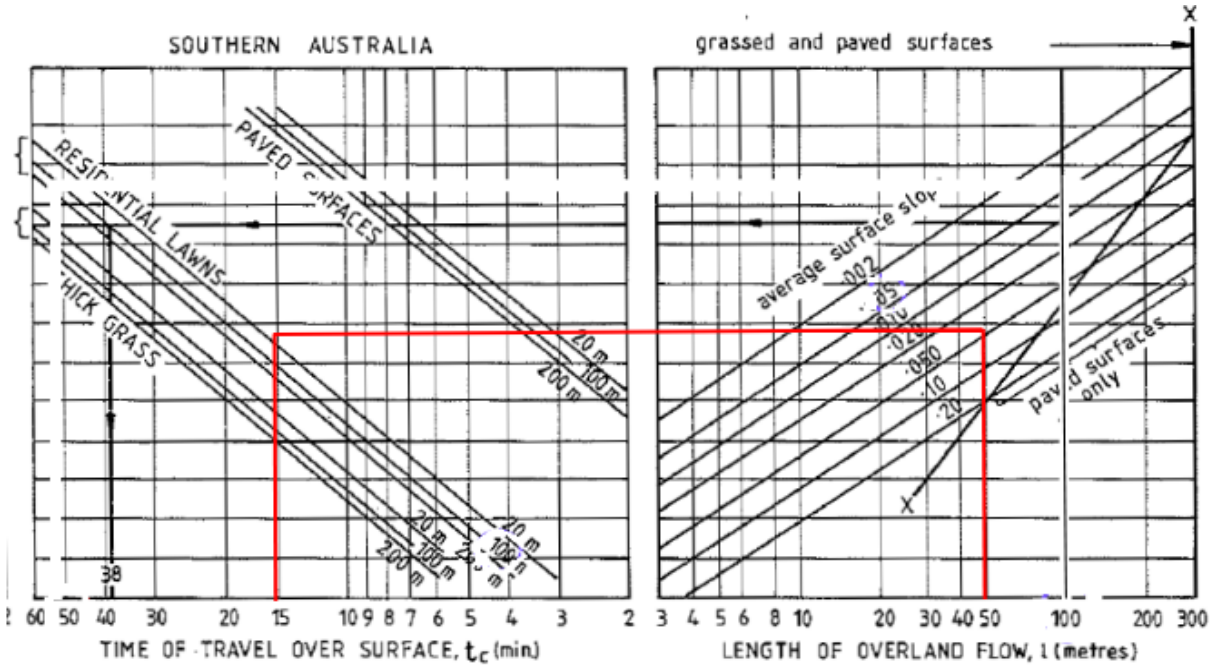
MOUNT BARKER DISTRICT COUNCIL

Planning Consent

TIME OF CONCENTRATION

Time of concentration: $t_c = \frac{6.94 \times (\mathrm{L} \times \mathrm{n})^{0.6}}{\mathrm{I}^{0.4} \times S^{0.3}}$

Design AEP	10%		
Distance (L):	50	m	(house, short grass)
Mannings (n):	0.025		(vacant, grass)
Slope (S):	0.036	m/m	(drop 1.8m over 50m)



Choose Tc that best match Duration,
Critical Time of Concentration = 15 mins

TEK ENGINEERS
Consulting Engineers

Job:	17810
Design:	K.B.
Date:	July'25
Sheet	SW2

PRE-DEV FLOW	**10% AEP**		(10yr ARI)
Site area =	1073	m^2	
Run-off coefficient (C) =	0.35		
Time of concentration (t_c) =	15	mins	
Rainfall intensity (I) =	58.6	mm/hr	
Q_{pre} = CIA / 3600 =	6.1	l/s	

TEK ENGINEERS
Consulting Engineers

Job:	17810
Design:	K.B.
Date:	July'25
Sheet	SW3

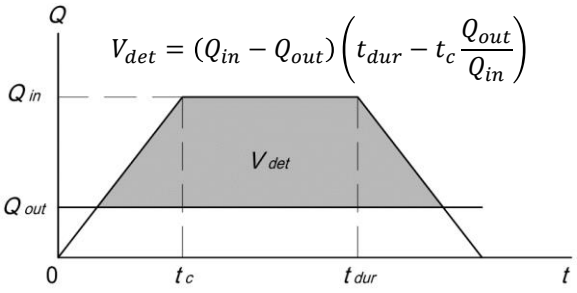
POST-DEV FLOW

Design AEP:	10%	(10yr ARI)	
Roof =	540	m2	C = 0.90
Paving =	84	m2	C = 0.75
Lawn/Permeable paving =	449	m2	C = 0.12
Time of concentration (t_c) =	15	mins	

Select Q_{out} = 6.1 l/s (restricted to 10% AEP)

t_{dur} mins	I mm/hr	Q_{in} l/s	V_{det} cbm
5	99.8	16.71	-
10	72.7	12.17	-
15	58.6	9.81	1.3
20	49.7	8.32	1.2
25	43.5	7.28	0.9
30	38.9	6.51	0.4
35	35.4	5.93	-
40	32.5	5.44	-
45	30.1	5.04	-
50	28.1	4.71	-
55	26.4	4.42	-
60	25.0	4.19	-
90	19.1	3.20	-
120	15.7	2.63	-
180	11.9	1.99	-
240	9.7	1.63	-

$$V_{det} = (Q_{in} - Q_{out})\left(t_{dur} - t_c \frac{Q_{out}}{Q_{in}}\right)$$



	A	C	AxC	Coverage	Vdet
Roof	540	0.90	486	81%	1.0
Paving	84	0.75	63	10%	0.1
Lawn	449	0.12	53.88	9%	0.1
	1073	0.56	602.88	100%	1.3

(see page SW5 -->)

TEK ENGINEERS
Consulting Engineers

Job:	17780
Design:	K.B.
Date:	May'25
Sheet	SW4

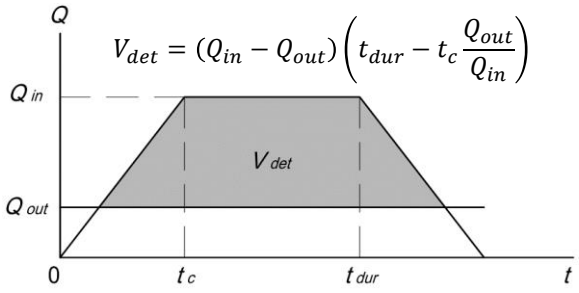
POST-DEV FLOW

Design AEP:	1%	(10yr ARI)	
Roof =	540	m2	C = 0.90
Paving =	84	m2	C = 0.75
Lawn/Permeable paving =	449	m2	C = 0.12
Time of concentration (t_c) =	15	mins	

Select Q_{out} = 6.1 l/s (restricted to 10% AEP)

t_{dur} mins	**I** mm/hr	**Q_{in}** l/s	**V_{det}** cbm
5	174.0	29.14	-
10	126.0	21.10	-
15	102.0	17.08	6.3
20	86.4	14.47	6.8
25	75.8	12.69	7.0
30	67.8	11.35	6.9
35	61.6	10.32	6.6
40	56.6	9.48	6.1
45	52.5	8.79	5.6
50	49.1	8.22	4.9
55	46.1	7.72	4.2
60	43.5	7.28	3.3
90	33.1	5.54	-
120	27.1	4.54	-
180	20.3	3.40	-
240	16.5	2.76	-

$$V_{det} = (Q_{in} - Q_{out})\left(t_{dur} - t_c \frac{Q_{out}}{Q_{in}}\right)$$



	A	C	AxC	Coverage	Vdet
Roof	540	0.90	486	81%	5.7
Paving	84	0.75	63	10%	0.7
Lawn	449	0.12	53.88	9%	0.6
	1073	0.56	602.88	100%	7.0

(see page SW6 -->)

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Consulting Engineers

Job:	17810
Design:	K.B.
Date:	July'25
Sheet	SW5

POST-DEV FLOW (CONT.)

DESIGN SUMMARY

DESIGN AEP: **10%** (10yr ARI)

Required detention:

Roof:	1.0	cbm
Paving + lawn:	0.2	cbm
	1.3	cbm

Provided:

Roof:	9.0	cbm via above ground water tanks (1.0 cbm per dwelling)
Paving + lawn:	4.0	cbm via sump/pump (underground)
	13.0	cbm ::: satisfied

DESIGN AEP: **1%**

Required detention:

Roof:	5.7	cbm
Paving + lawn:	1.4	cbm
	7.0	cbm

Provided:

Roof:	9.0	cbm via above ground water tanks (1.0 cbm per dwelling)
Paving + lawn:	4.0	cbm via sump/pump (underground)
	13.0	cbm ::: satisfied

PUMP & SUMP DESIGN CALCULATIONS

TEK ENGINEERS
Consulting Engineers

Date: 18-Jul-25
Page: SW6/A

Job:	17810
Site:	13 ALEXANDRINA ROAD MOUNT BARKER
For:	DANVAS DEVELOPMENTS

1. SUMP AND PUMP CALCULATIONS

1.1 STORAGE VOLUME FOR 1:100 STORM EVENT WITH A SELECTED PUMPING RATE

Design storm **1 : 100 yr**

Eaves gutter storage capacity **1 : 20 yr** (to calculate gap flow to 1 in 100 yr)

New roof area	0	0.90
Paved area to pump	84	0.75
Garden/permeable paving area to pump	449	0.12
Total area	533	0.22

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Try pump rate 3.0 l/sec

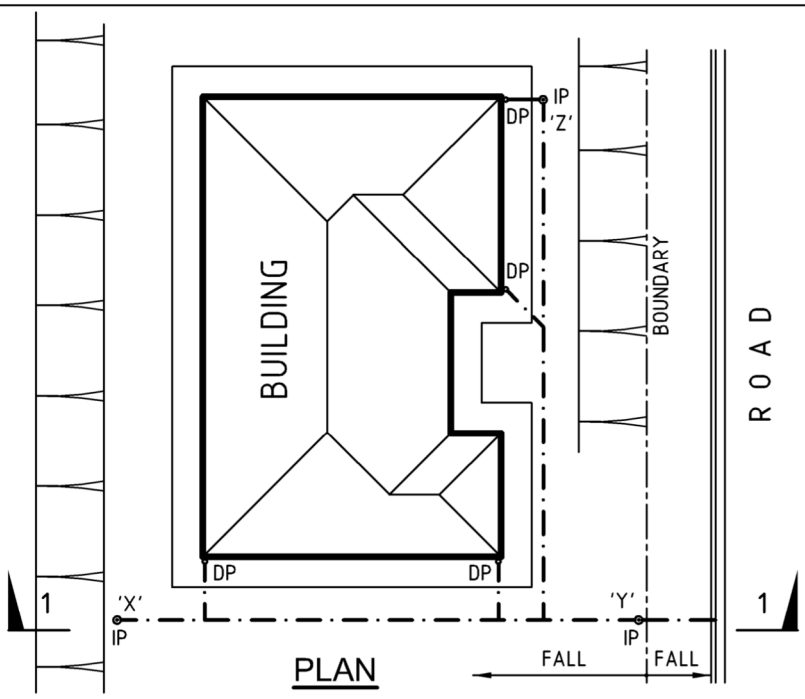
DUR.	1 : 100 yr ARI	1 : 20 yr ARI	1 : 100 yr Q	1 : 20 yr Q	VOL. IN	VOL. OUT	DET. VOL.
5 mins	186.00	121.00	6.04	0.00	1812	900	912
7 mins	161.00	105.00	5.23	0.00	2195	1260	935
10 mins	136.00	89.00	4.42	0.00	2649	1800	849
15 mins	110.00	72.00	3.57	0.00	3214	2700	514
20 mins	94.00	62.00	3.05	0.00	3662	3600	62
25 mins	82.00	54.00	2.66	0.00	3993	4500	-507
30 mins	73.40	48.70	2.38	0.00	4289	5400	-1111
35 mins	66.60	44.30	2.16	0.00	4541	6300	-1759
40 mins	61.00	40.70	1.98	0.00	4753	7200	-2447
45 mins	57.00	37.80	1.85	0.00	4997	8100	-3103
50 mins	53.00	35.30	1.72	0.00	5162	9000	-3838
55 mins	49.50	33.20	1.61	0.00	5303	9900	-4597
1 hr	46.60	31.30	1.51	0.00	5447	10800	-5353
2 hrs	29.10	19.80	0.94	0.00	6802	21600	-14798

1.2. STORAGE VOLUME FOR PUMP FAILURE

Detention volume is based on **1 : 10 yr** **2 hrs** storm as per councils requirement.

ARI = 16.4 mm/hr

Required volume = $\frac{CIA}{3600} \times t =$ 3834 L



PLAN

NOTES:
1. SEALED SYSTEM TO BE CONSTRUCTED TO PRESSURE LINE STANDARD (GLUED JOINTS FOR UPVC) STATIC TESTED BEAFORE BACKFILLING.
2. NO SURFACE INLETS (SUMP, GRATED PITS ETC.) PERMITTED IN SEALED SYSTEM.
3. DO NOT USE SEAMED METAL DOWN PIPES OR FITTINGS.
4. 'Z' DENOTES RISER AND SCREW ON INSPECTION CAP AT FINISHED SURFACE LEVEL OR CLEANING EYE IN DP FOR RODDING OR FLUSHING PURPOSES AT 'DEAD END' BRANCHES.
5. REGULAR FLUSHING AND MAINTENANCE BY OWNER IS REQUIRED.

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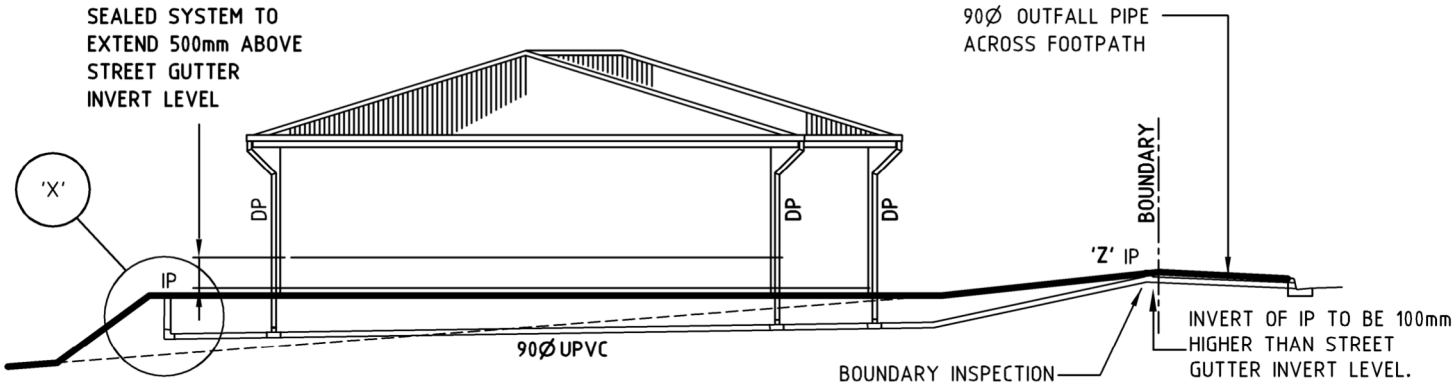
SEALED STORMWTER AND EAVES GUTTER SYSTEM

Drawn : BA

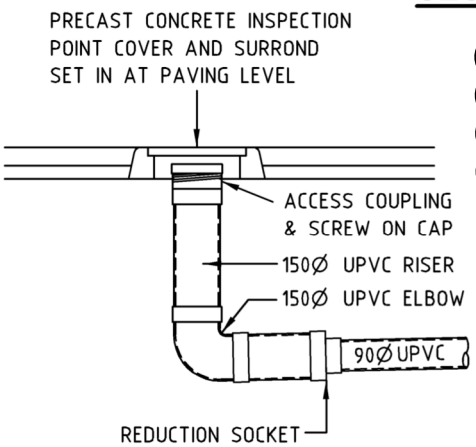
Design : BA

Date : MAY'23

Sheet Number : SSD1



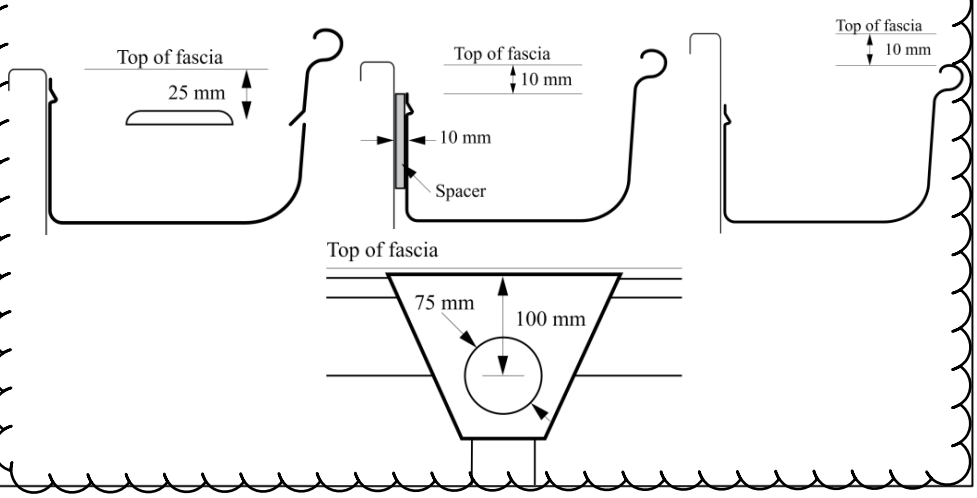
SECTION 1-1

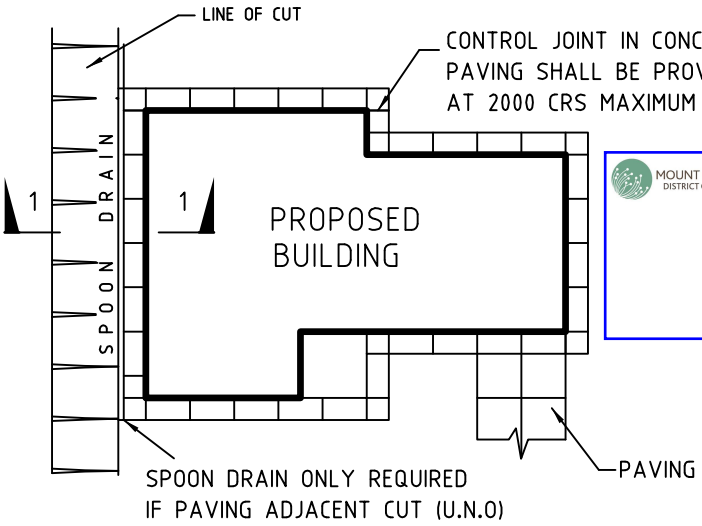


DETAIL X

Details of the site stormwater drainage in accordance with AS/NZS 3500.3 including:

Gutters will be provided with continuous overflow provisions in accordance with BCA-Table 7.4.4a and box gutters with dedicated overflow provisions in accordance with BCA-Table 7.4.4b or provide details of the overflow provisions to the downpipe and gutter system in accordance with clause 7.4.4 (Refer below)





PLAN OF PAVING AROUND BUILDING

MOUNT BARKER DISTRICT COUNCIL

Planning Consent

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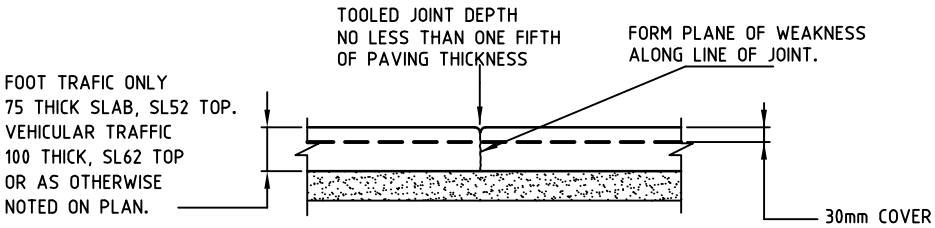
STANDARD PAVING DETAILS

Drawn : BA

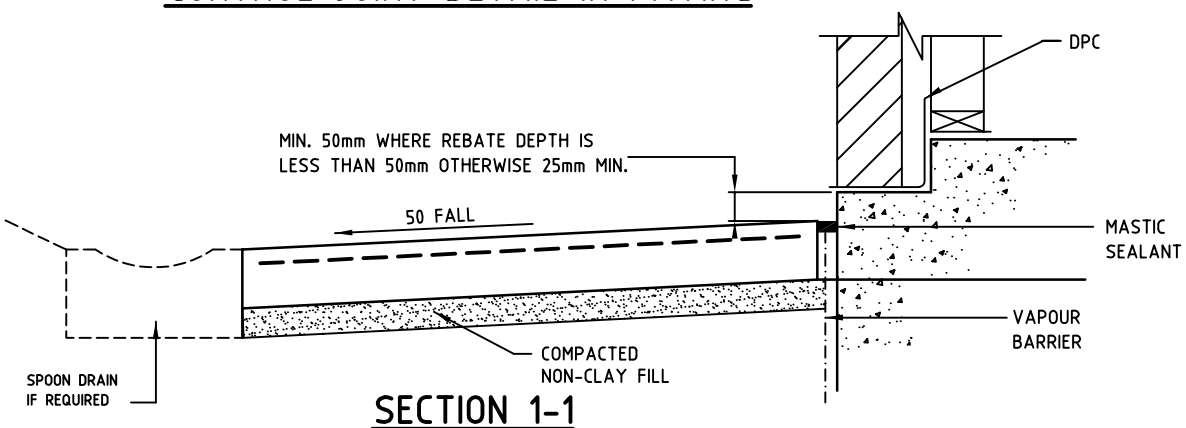
Design : BA

Date : OCT'21

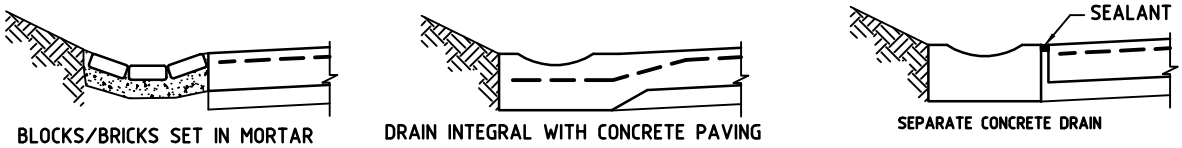
Sheet Number : PV1



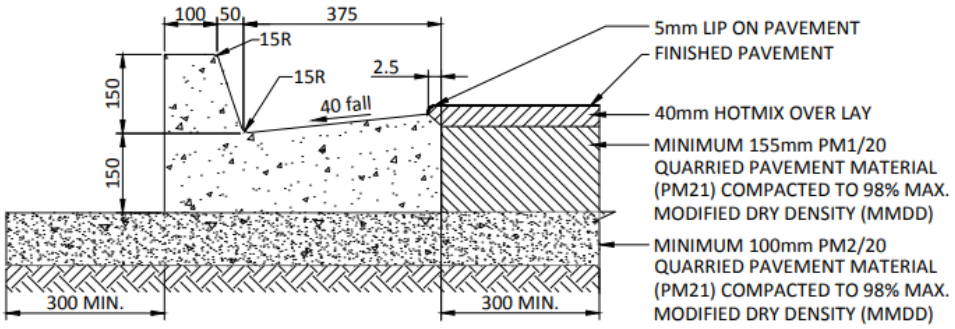
CONTROL JOINT DETAIL IN PAVING



SECTION 1-1



SPOON DRAIN DETAILS



150mm KERB AND GUTTER

NOTES

1. PAVING MUST NOT BRIDGE THE DAMP PROOF COURSE (DPC).
2. PAVING SHALL BE GRADED TO ENSURE ALL WATER CAN DRAIN AWAY FROM THE BUILDING.
3. PROVIDE EDGE DRAINS WHERE NECESSARY TO DIVERT RUNOFF.
4. PAVING IS A NON-STRUCTURAL COMPONENT. ON REACTIVE SITES H-D, E-D THE PAVING MAY REQUIRE RE-LAYING AT TIMES DUE TO HIGH SOIL MOVEMENTS.

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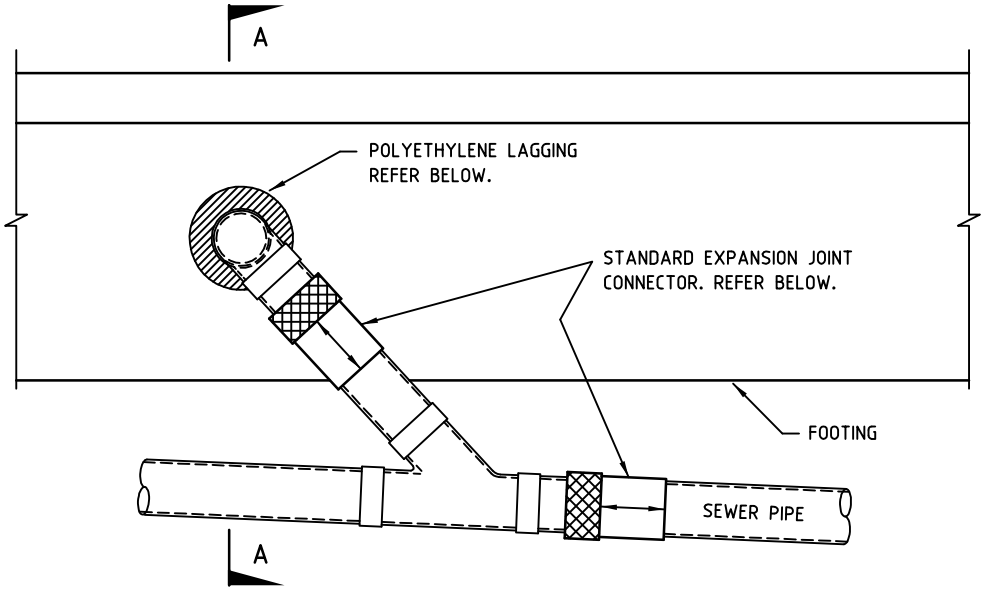
FLEXIBLE SERVICE CONNECTION DETAIL FOR CLASS 'H' & 'E' (STORMWATER & SEWER)

Drawn : BA

Design : BA

Date : OCT'21

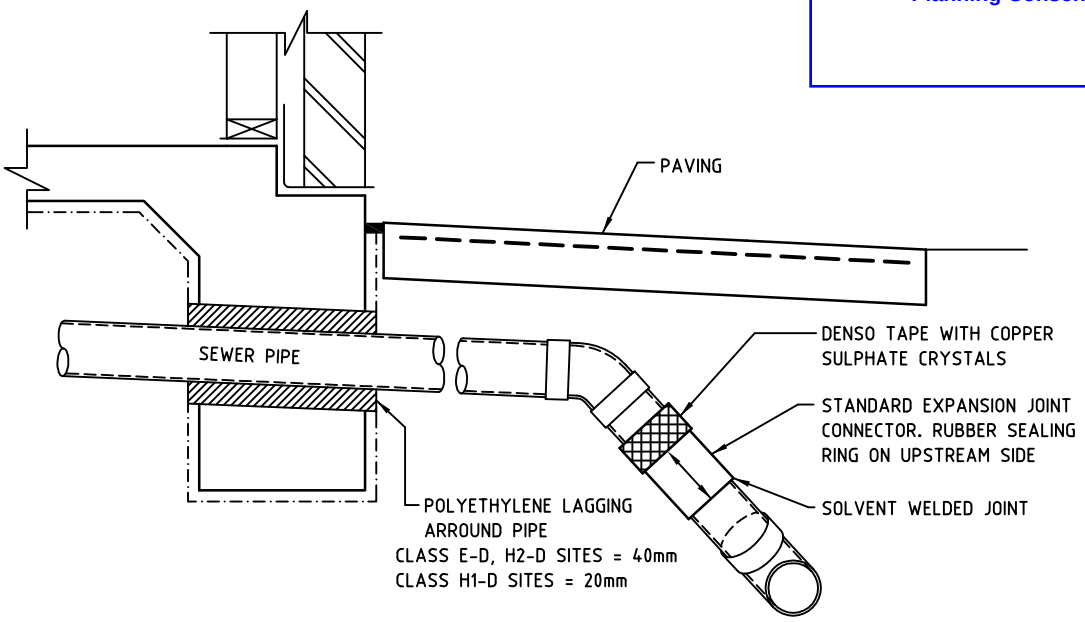
Sheet Number : FC1



SIDE ELEVATION

MOUNT BARKER DISTRICT COUNCIL

Planning Consent



SECTION A-A

NOTES

1. CONNECTORS ARE REQUIRED, AS DETAILED ABOVE, AT EACH CONNECTION.
2. CONNECTIONS ARE REQUIRED AT EACH LOCATION WHERE ANY PIPES (60mm OR GREATER) PENETRATE OR PASS BENEATH THE EXTERNAL FOOTING BEAMS.
3. THE DENSO TAPE MUST BE SPRINKLED WITH COPPER SULPHATE CRYSTALS PRIOR TO WRAPPING AND MUST EXTEND 50mm BEYOND THE JOINT ON EITHER SIDE.
4. DETAILS ARE APPLICABLE TO SEWER AND STORMWATER PIPES.

MOUNT BARKER DISTRICT COUNCIL

Planning Consent

TEK engineers

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DETENTION TANK SERIES
(CONCEPT ONLY)

NOTES
1. TANKS MAY BE CONNECTED BY Ø90mm UNDERGROUND SYSTEM PROVIDED INSPECTION OPENINGS ARE LOCATED AT ALL VERTICAL & HORIZONTAL BENDS.
2. WHERE TANKS ARE CONNECTED IN SERIES A 'FULL DETENTION TANK' MUST END THE SERIES.
3. A DETENTION TANK SERIES MAY HAVE ONLY ONE OUTLET FROM THE PROPERTY & THE OUTLET MUST BE LOCATED ON THE LAST TANK OF THE SERIES.

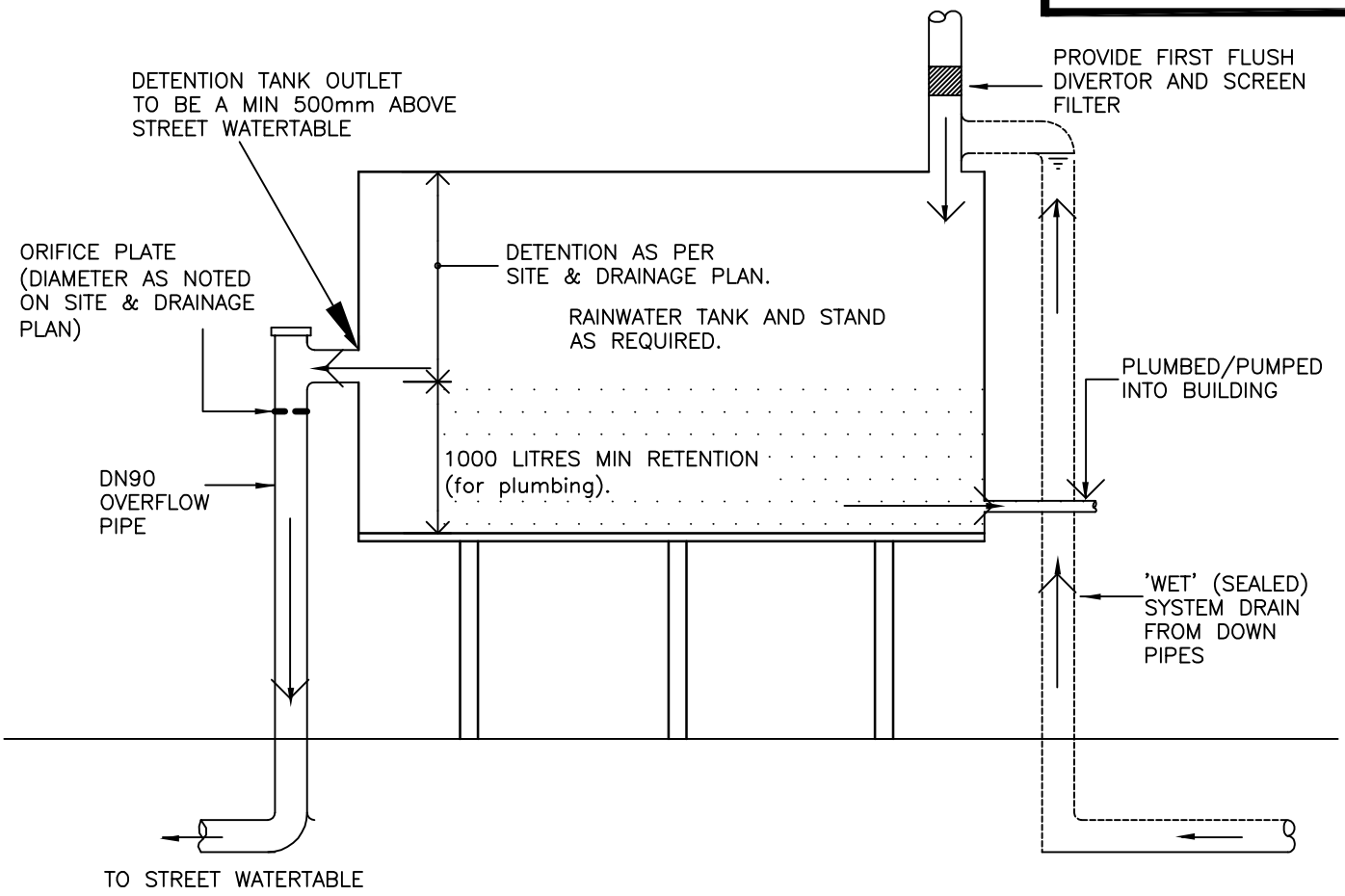
DETENTION TANK DETAIL

Drawn : BA

Design : BA

Date : MAY'17

Sheet Number : DT



DETENTION / STORAGE

WALL HEIGHT (H) mm	PIER DEPTH (D) mm	PIER DIAMETER (B) mm	STEEL POST
600	800	450	150UB14
1000	1200	450	150UB14
1200	1400	450	150UB14
1500	1700	600	150UB14
1800	1900	600	180UB18
2100	2200	600	200UB22
2400	2600	600	200UC46
2700	2400	900	200UC46
3000	2800	900	200UC46

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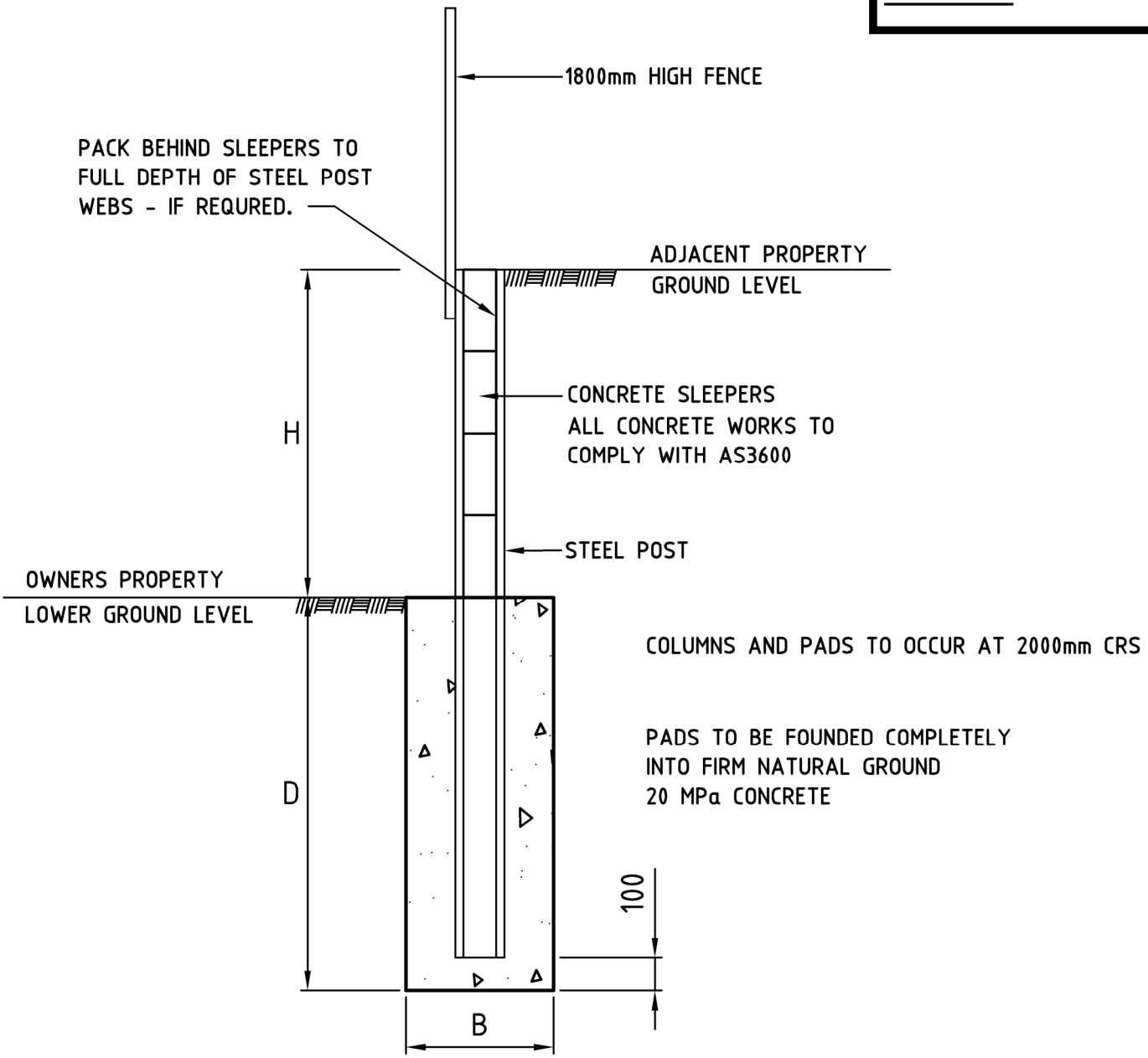
SLEEPER RETAINING WALL (RETAINING CUT)

Drawn : BA

Design : BA

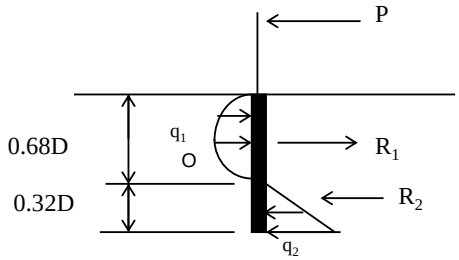
Date : MAR'25

Sheet Number : RW1

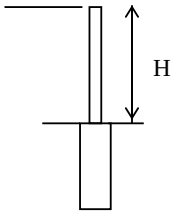


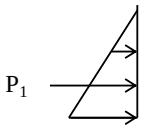
SLEEPER RETAINING WALL DESIGN (RETAINING CUT)

RETAINING WALL ANALYSIS

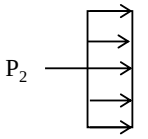


$R_1 = q_1(2/3)(0.68DB)$
$R_2 = q_2(0.5)(0.32DB)$
$R_1 = P + R_2$
Sum $M_o = 0$





Soil Pressure



Surcharge

SOIL PROPERTIES

K_a =	0.4	
Surcharge =	5	kPa
Unit Weight =	17	kN/m^3
Passive Pressure, q_2 =	100	kPa

WALL HEIGHT **0.60 m**

Pier Spacing	2.00	m
Passive Pressure, q_2 =	100	kPa
q_1 =	47.15	kPa

Footing Pier

P_1 =	1.22	kN/m
P_2 =	1.20	kN/m
Diameter =	0.45	m
M_o =	0.0	kNm
Depth =	0.50	m

USE 450 mm x 600 mm deep piers @ 2000 mm centres

Steel Posts

Z_{req} = 7.3E+3 mm^3

USE 150UB14 posts @ 2000 mm centres

WALL HEIGHT **1.00 m**
Pier Spacing 2.00 m
Passive Pressure, q_2 = 100 kPa
q_1 = 48.53 kPa

Footing Pier

P_1 = 3.40 kN/m
P_2 = 2.00 kN/m
Diameter = 0.45 m
M_o = 0.0 kNm
Depth = 1.00 m

USE 450 mm x 1100 mm deep piers @ 2000 mm centres

Steel Posts

Z_{req} = 25.9E+3 mm^3

USE 150UB14 posts @ 2000 mm centres

WALL HEIGHT **1.20 m**
Pier Spacing 2.00 m
Passive Pressure, q_2 = 100 kPa
q_1 = 49.89 kPa

Footing Pier

P_1 = 4.90 kN/m
P_2 = 2.40 kN/m
Diameter = 0.45 m
M_o = 0.0 kNm
Depth = 1.23 m

USE 450 mm x 1300 mm deep piers @ 2000 mm centres

Steel Posts

Z_{req} = 41.2E+3 mm^3

USE 150UB14 posts @ 2000 mm centres

WALL HEIGHT **1.50 m**
Pier Spacing 2.00 m
Passive Pressure, q_2 = 100 kPa
q_1 = 48.61 kPa

Footing Pier

P_1 = 7.65 kN/m
P_2 = 3.00 kN/m
Diameter = 0.6 m
M_o = 0.0 kNm
Depth = 1.47 m

USE 600 mm x 1600 mm deep piers @ 2000 mm centres

Steel Posts

Z_{req} = 73.6E+3 mm^3

USE 150UB14 posts @ 2000 mm centres

WALL HEIGHT **1.80 m**
Pier Spacing 2.00 m
Passive Pressure q_2 = 150.0 kPa
q_1 = 70.85 kPa

Footing Pier

P_1 = 11.02 kN/m
P_2 = 3.60 kN/m
Diameter = 0.6 m
M_o = 0.00 kNm
Depth = 1.50 m

USE 600 mm x 1700 mm deep piers @ 2000 mm centres

Steel Posts

Z_{req} = 119.4E+3 mm^3

USE 180UB18 posts @ 2000 mm centres

WALL HEIGHT **2.10 m**
Pier Spacing 2.00 m
Passive Pressure, q_2 = 150.0 kPa
q_1 = 72.06 kPa

Footing Pier

P_1 = 14.99 kN/m
P_2 = 4.20 kN/m
Diameter = 0.6 m
M_o = 0.0 kNm
Depth = 1.85 m

USE 600 mm x 2000 mm deep piers @ 2000 mm centres

Steel Posts

Z_{req} = 180.7E+3 mm^3

USE 200UB22 posts @ 2000 mm centres

WALL HEIGHT **2.40 m**
Pier Spacing 2.00 m
Passive Pressure, q_2 = 150 kPa
q_1 = 72.86 kPa

Footing Pier

P_1 = 19.58 kN/m
P_2 = 4.80 kN/m
Diameter = 0.6 m
M_o = 0.0 kNm
Depth = 2.25 m

USE 600 mm x 2400 mm deep piers @ 2000 mm centres

Steel Posts

Z_{req} = 259.7E+3 mm^3

USE 200UC46 posts @ 2000 mm centres

WALL HEIGHT **2.70 m**

Pier Spacing 2.00 m

Passive Pressure, q_2 = 150 kPa

q_1 = 70.82 kPa

Footing Pier

P_1 = 24.79 kN/m

P_2 = 5.40 kN/m

Diameter = 0.9 m

M_o = 0.0 kNm

Depth = 2.07 m

USE 900 mm x 2200 mm deep piers @ 2000 mm centres

Steel Posts

Z_{req} = 358.8E+3 mm^3

USE 200UC46 posts @ 2000 mm centres

WALL HEIGHT **3.00 m**

Pier Spacing 2.00 m

Passive Pressure, q_2 = 150 kPa

q_1 = 71.45 kPa

Footing Pier

P_1 = 30.60 kN/m

P_2 = 6.00 kN/m

Diameter = 0.9 m

M_o = 0.0 kNm

Depth = 2.42 m

USE 900 mm x 2600 mm deep piers @ 2000 mm centres

Steel Posts

Z_{req} = 400.0E+3 mm^3

USE 200UC46 posts @ 2000 mm centres

WALL HEIGHT (H) mm	PIER DEPTH (D) mm	PIER DIAMETER (B) mm	STEEL POST
600	1300	600	150UB14
1000	1600	600	150UB18
1200	1800	600	180UB18
1500	2100	600	200UB18
1800	2500	600	200UB25
2100	2800	600	200UC46
2400	2700	900	200UC46
2700	3000	900	200UC52
3000	3300	900	250UC73

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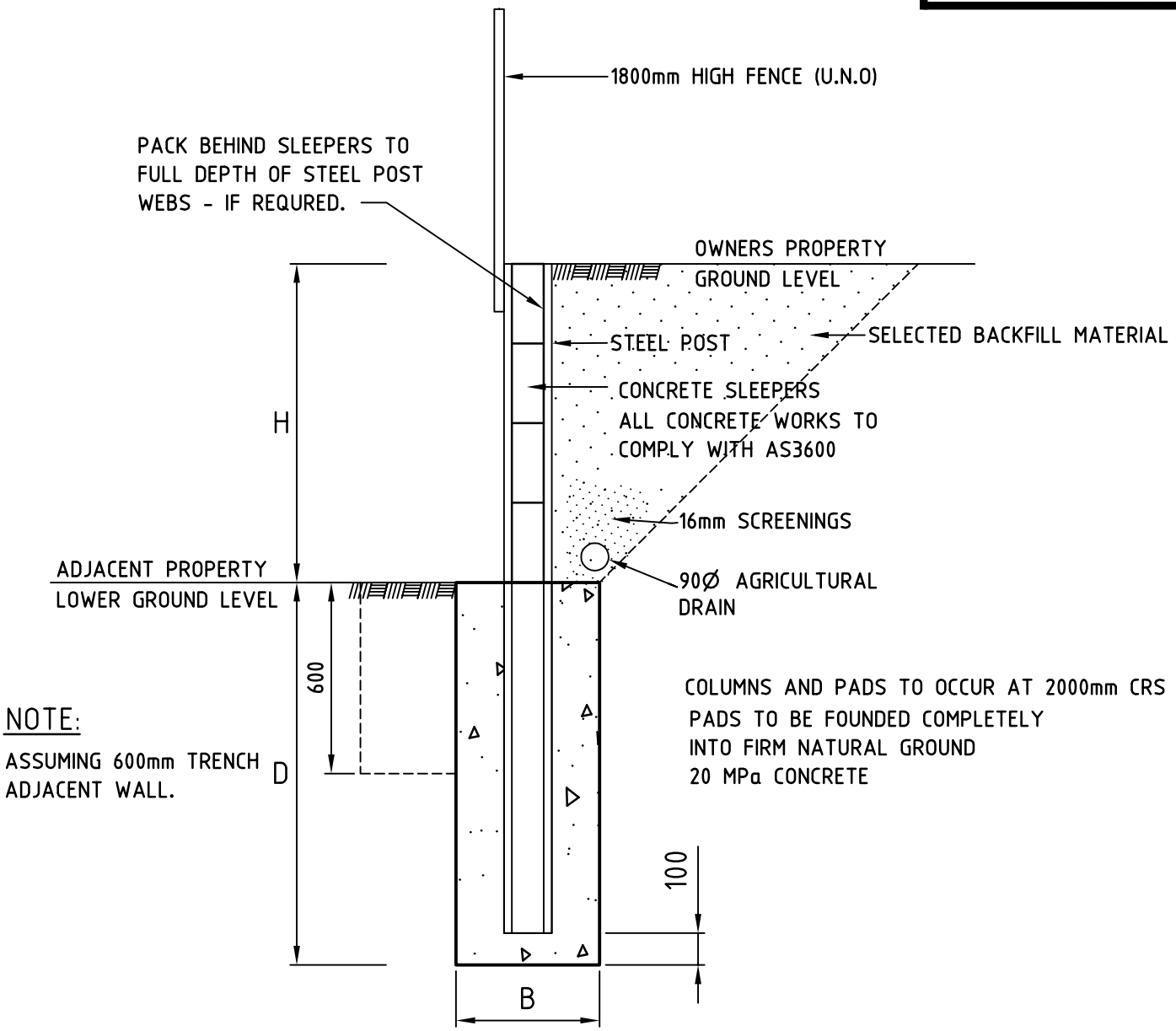
SLEEPER RETAINING WALL (RETAINING FILL)

Drawn : BA

Design : BA

Date : APR'21

Sheet Number : RW2

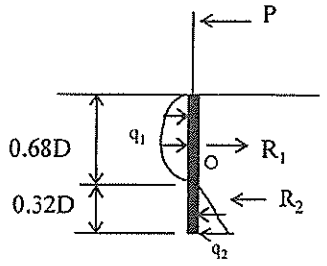


NOTE:

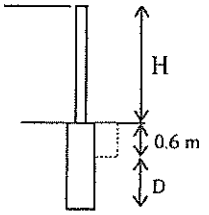
ASSUMING 600mm TRENCH ADJACENT WALL.

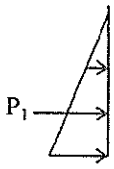
SLEEPER RETAINING WALL DESIGN (RETAINING FILL)
(Assuming 600 mm trench adjacent wall)

RETAINING WALL ANALYSIS

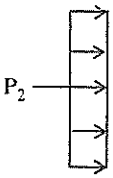


$R_1 = q_1(2/3)(0.68DB)$
$R_2 = q_2(0.5)(0.32DB)$
$R_1 = P + R_2$
Sum $M_o = 0$





Soil Pressure



Surcharge

SOIL PROPERTIES

K_a =	0.3	
Surcharge =	5	kPa
Unit Weight =	17	kN/m^3
Passive Pressure, q_2 =	150	kPa

WALL HEIGHT	**0.60**	**m**
Pier Spacing	2.00	m
Passive Pressure, q_2 =	150	kPa
q_1 =	67.4	kPa

Footing Pier

P_1 =	3.67	kN/m
P_2 =	1.80	kN/m
Diameter =	0.6	m
M_o =	0.00	kNm
Depth =	0.70	m

USE 600 mm x 1300 mm deep piers @ 2000 mm centres

Steel Posts

Z_{req} = 30.9E+3 mm^3

USE 150UB14 posts @ 2000 mm centres

WALL HEIGHT **1.00 m**
Pier Spacing 2.00 m
Passive Pressure, q_2 = 150 kPa
q_1 = 68.7 kPa

Footing Pier

P_1 = 6.53 kN/m
P_2 = 2.40 kN/m
Diameter = 0.6 m
M_o = 0.00 kNm
Depth = 1.04 m

USE 600 mm x 1600 mm deep piers @ 2000 mm centres

Steel Posts

Z_{req} = 65.5E+3 mm^3

USE 150UB18 posts @ 2000 mm centres

WALL HEIGHT **1.20 m**
Pier Spacing 2.00 m
Passive Pressure, q_2 = 150 kPa
q_1 = 69.3 kPa

Footing Pier

P_1 = 8.26 kN/m
P_2 = 2.70 kN/m
Diameter = 0.6 m
M_o = 0.00 kNm
Depth = 1.23 m

USE 600 mm x 1800 mm deep piers @ 2000 mm centres

Steel Posts

Z_{req} = 89.5E+3 mm^3

USE 180UB18 posts @ 2000 mm centres

WALL HEIGHT **1.50 m**
Pier Spacing 2.00 m
Passive Pressure, q_2 = 150 kPa
q_1 = 70.2 kPa

Footing Pier

P_1 = 11.25 kN/m
P_2 = 3.15 kN/m
Diameter = 0.6 m
M_o = 0.00 kNm
Depth = 1.54 m

USE 600 mm x 2100 mm deep piers @ 2000 mm centres

Steel Posts

Z_{req} = 135.5E+3 mm^3

USE 200UB18 posts @ 2000 mm centres

WALL HEIGHT **1.80 m**
Pier Spacing 2.00 m
Passive Pressure, q_2 = 150 kPa
q_1 = 70.9 kPa

Footing Pier

P_1 = 14.69 kN/m
P_2 = 3.60 kN/m
Diameter = 0.6 m
M_o = 0.00 kNm
Depth = 1.87 m

USE 600 mm x 2500 mm deep piers @ 2000 mm centres

Steel Posts

Z_{req} = 194.8E+3 mm^3

USE 200UB25 posts @ 2000 mm centres

WALL HEIGHT **2.10 m**
Pier Spacing 2.00 m
Passive Pressure, q_2 = 150 kPa
q_1 = 71.6 kPa

Footing Pier

P_1 = 18.59 kN/m
P_2 = 4.05 kN/m
Diameter = 0.6 m
M_o = 0.00 kNm
Depth = 2.23 m

USE 600 mm x 2800 mm deep piers @ 2000 mm centres

Steel Posts

Z_{req} = 269.1E+3 mm^3

USE 200UC46 posts @ 2000 mm centres

WALL HEIGHT **2.40 m**
Pier Spacing 2.00 m
Passive Pressure, q_2 = 150 kPa
q_1 = 69.6 kPa

Footing Pier

P_1 = 22.95 kN/m
P_2 = 4.50 kN/m
Diameter = 0.9 m
M_o = 0.00 kNm
Depth = 2.02 m

USE 900 mm x 2700 mm deep piers @ 2000 mm centres

Steel Posts

Z_{req} = 360.0E+3 mm^3

USE 200UC46 posts @ 2000 mm centres

WALL HEIGHT **2.70 m**
Pier Spacing 2.00 m
Passive Pressure, q_2 = 150 kPa
q_1 = 70.1 kPa

Footing Pier

P_1 = 27.77 kN/m
P_2 = 4.95 kN/m
Diameter = 0.9 m
M_o = 0.00 kNm
Depth = 2.33 m

USE 900 mm x 3000 mm deep piers @ 2000 mm centres

Steel Posts

Z_{req} = 469.3E+3 mm^3

USE 200UC52 posts @ 2000 mm centres

WALL HEIGHT **3.00 m**
Pier Spacing 2.00 m
Passive Pressure, q_2 = 150 kPa
q_1 = 70.6 kPa

Footing Pier

P_1 = 33.05 kN/m
P_2 = 5.40 kN/m
Diameter = 0.9 m
M_o = 0.00 kNm
Depth = 2.66 m

USE 900 mm x 3300 mm deep piers @ 2000 mm centres

Steel Posts

Z_{req} = 598.5E+3 mm^3

USE 250UC73 posts @ 2000 mm centres