VANGUARD | CONSULTING ENGINEERS

PROPOSED DUAL OCCUPANCY AT
17 CALDWELL PARADE, YAGOONA NSW 2199

VANGUARD | CONSULTING ENGINEERS

OFFICE 3.07 LEVEL 3
14-16, LEXINGTON DRIVE
BELLA VISTA, 2154

M: (02) 9145 0253

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DRAWN	DATE	DESCRIPTION	ISSUE
D.S.	23.06.2024	ISSUED FOR D.A.	A
D.S.	01.08.2024	ISSUED FOR D.A.	B

CLIENT: -

SITE ADDRESS: 17 CALDWELL PARADE, YAGOONA NSW 2199

DESIGNED BY:	D.S.	ISSUE: B
CHECKED BY:	D.S.	
SCALE:	1:100	
CLIENT REF:	JOB NO:	SHEET NO:
-	VSW24840	SW01

COVER PAGE

LEGEND

DP ●	DOWNPIPE
SW >	STORMWATER LINE
RW >	ROOF WATER LINE
SSD	SUBSOIL DRAINAGE LINE
OF >	OVERFLOW LINE
SWRM SWRM	STORMWATER RISING MAIN
e	EXISTING STORMWATER LINE
SW SW	AUTHORITY STORMWATER LINE
HL HL	HIGH LEVEL STORMWATER LINE
S	AUTHORITY SEWER LINE
W	AUTHORITY WATER LINE
G G	AUTHORITY GAS LINE
E	AUTHORITY ELECTRICITY LINE
FO FO FO	AUTHORITY FIBRE OPTIC LINE
TEL	AUTHORITY COMMS LINE
OH(E)	AUTHORITY OVERHEAD ELECTRICAL LINE
/ /	FENCE LINE
	GRATED SURFACE INLET PIT
	GRATED SURFACE INLET PIT WITH ENVIROPOD INSERT
	JUNCTION PIT
	KERB INLET PIT
	EXISTING GRATED SURFACE INLET PIT
	GRATED TRENCH DRAIN
	EXISTING JUNCTION PIT
	EXISTING KERB INLET PIT
eTEL	EXISTING TELSTRA PIT
eHYD	EXISTING HYDRANT
eSV	EXISTING STOP VALVE
eGAS	EXISTING GAS VALVE
ePP	EXISTING POWER POLE
eBT	EXISTING BOUNDARY TRAP

LEGEND

FF	FIRST FLUSH
eSMH	EXISTING SEWER MANHOLE
OFP	OVERLAND FLOW PATH
RWO	RAINWATER OUTLET
CO	CLEAR OUT POINT
DDO	DISH DRAIN OUTLET
PD	PLANTER DRAIN
	CAPPING
1.01	PIT TAG/NUMBER
RH	RAINHEAD
	DOWNPIPE DROP
	NON RETURN VALVE
	WALL PENETRATION
DP	DOWNPIPE SPREADER
	WARNING LIGHT
0.00	SPOT LEVELS
	BENCHMARK

ABBREVIATIONS:

Ø or DIA	DIAMETER
CBR	CALIFORNIA BEARING RATIO
CH	CHAINAGE
CL	CENTER LINE
CO	CLEAR OUT
DD	DISH DRAIN
DDO	DISH DRAIN OUTLET
DEJ	DOWELLED EXPANSION JOINT
DGB	DENSE GRADED BASECOURSE
DGS	DENSE GRADED SUB-BASE
DP	DOWNPIPE
e	EXISTING
FFL	FINISHED FLOOR LEVEL
GTD	GRATED TRENCH DRAIN
GSIP	GRATED SURFACE INLET PIT
HYD	HYDRANT
IJ	ISOLATING JOINT
IK	INTEGRAL KERB
IL	INVERT LEVEL
IP	INTERSECTION POINT
KIP	KERB INLET PIT
KO	KERB ONLY
K&G	KERB & GUTTER
KR	KERB RETURN
LS	LONGITUDINAL SECTION
NGL	NATURAL GROUND LEVEL
OFP	OVERLAND FLOW PATH
OSD	ON-SITE DETENTION
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
RK	ROLL KERB & GUTTER
RL	REDUCED LEVEL
RW	RETAINING WALL
RWT	RAINWATER TANK
SJ	SAWN CONTROL JOINT
SMH	SEWER MAN HOLE
SW	STORMWATER
SWP	STORMWATER PIT
SWRM	STORMWATER RISING MAIN
SWS	STORMWATER SUMP
SV	STOP VALVE
TOK	TOP OF KERB
TOW	TOP OF WALL
TWL	TOP WATER LEVEL
TP	TANGENT POINT
UPVC	UNPLASTICISED POLYVINYL CHLORIDE
UNO	UNLESS NOTED OTHERWISE
WPJ	WEAKENED PLANE JOINT
FF	FIRST FLUSH DEVICE
TYP	TYPICAL
BM	BENCH MARK

DRAINAGE NOTES:

ALL PIPES TO BE LAID ON 75mm SAND BED WITH THE BARRELS FULLY SUPPORTED

100mm AND 150mm DIAMETER PIPES TO BE LAID ON MINIMUM 1% GRADE

MINIMUM DEPTH OF COVER FOR PIPES NOT SUBJECT TO VEHICULAR LOADING TO BE 300mm

ALL DRAINAGE PIPES LAID UNDER PAVEMENT SHALL BE REINFORCED CONCRETE WITH RUBBER RING JOINTS

BACKFILL TRENCHES WITH COMPACTED SAND OR APPROVED AGGREGATE MATERIAL

ALL PITS TO HAVE 600x600mm INTERNAL DIMENSIONS (U.N.O.)

SILT ARRESTORS TO HAVE 900x900mm INTERNAL DIMENSIONS

HEAVY DUTY GRATES AND COVERS ARE TO BE PROVIDED IN TRAFFICABLE AREAS

PIT GRATE TO BE TYPE WELDLOK OR APPROVED EQUIVALENT

ALL PITS SHALL BE PROVIDED WITH A LOCKING CLIP

ALL PITS SHALL BE MAINTAINED REGULARLY

TOP OF BENCHING SHALL BE TO THE HALF OF THE OUTLET PIPE DIAMETER

MAXIMUM FRONT ENTRY PIPE:-
STRAIGHT ENTRY - Ø750
SKEW ENTRY 45° - Ø525

Ø100 SUBSOIL DRAINAGE PIPE 3000mm LONG WRAPPED IN FABRIC SOCK TO BE PROVIDED ADJACENT TO INLET PIPES

COMPRESSIVE STRENGTH f'_c FOR CAST IN SITU CONCRETE TO BE A MINIMUM OF 20MPa AT 28 DAYS

PROVIDE CLEANING EYES TO ALL DOWNPIPES NOT DIRECTLY CONNECTED TO PITS

ISOLATED JOINTS TO BE PROVIDED TO ISOLATE CONCRETE PAVEMENTS FROM PITS

ALL TRENCH GRATES PROVIDED SHALL HAVE A MINIMUM CLEAR WIDTH OF 200mm

STORMWATER DRAINAGE CONNECTIONS TO THE MAIN SYSTEM SHALL BE TO THE REQUIREMENTS AND THE SATISFACTION OF LOCAL COUNCIL

STORMWATER PIPE BEDDING/PAVING NOTES:

WHERE TRENCH BASE IS ROCK A MINIMUM OF 75mm BEDDING TO BE PROVIDED UNDER PIPE COLLARS.

STORMWATER PIPE BEDDING DETAIL TO BE IN ACCORDANCE WITH LOCAL COUNCIL REQUIREMENTS. BEDDING DETAILS TO BE CONFIRMED UPON EXCAVATION & PRIOR TO INSTALLATION OF PIPEWORK.

FOOTPATH REINSTATEMENT NOTES:

REMOVE ALL SAND FILL WITHIN THE FOOTPATH AREA TO THE EXISTING SUBGRADE.

SUPPORT ALL AUTHORITY SERVICES TO STRUCTURAL ENGINEERS DETAILS DURING EXCAVATION.

REINSTATE FOOTPATH SUBGRADE.

THE CONTRACTOR SHALL PROVIDE CERTIFICATION OF COMPACTION FROM A NATA REGISTERED TESTING AUTHORITY. MINIMUM THREE TESTS PER LAYER AS FOLLOWS:

SELECT FILL	95% MODIFIED
SELECT FILL (LESS THAN 300mm BELOW BASE COURSE)	98% MODIFIED
BASE COURSE	100% MODIFIED

EROSION & SEDIMENT CONTROL NOTES:

PROVIDE SILT FENCE/HAY BAIL BARRIERS TO THE LOW SIDE OF ALL EXPOSED EARTH EXCAVATIONS (TYPICAL).

ISOLATE EXISTING STORMWATER PITS WITH HAY BALES TO FILTER ALL INCOMING FLOWS.

DO NOT STOCK PILE EXCAVATED MATERIAL ON THE ROAD WAY.

SURVEY

THE EXISTING SITE CONDITIONS SHOWN ON THE FOLLOWING DRAWINGS HAVE BEEN INVESTIGATED BY REGISTERED SURVEYORS. THE INFORMATION IS SHOWN TO PROVIDE A BASIS FOR DESIGN. PRIME ENGINEERING CONSULTANTS DOES NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE SURVEY BASE OR ITS SUITABILITY AS A BASIS FOR CONSTRUCTION DRAW.

SHOULD DISCREPANCIES BE ENCOUNTERED DURING CONSTRUCTION BETWEEN THE SURVEY DATA AND ACTUAL FIELD DATA, CONTACT PRIME ENGINEERING CONSULTANTS.

AS3500.3
MINIMUM INTERNAL DIMENSIONS FOR STORMWATER AND INLET PITS

DEPTH TO INVERT OF OUTLET		MINIMUM INTERNAL DIMENSIONS mm		
		RECTANGULAR		CIRCULAR
		WIDTH	LENGTH	DIAMETER
	≤ 600	450	450	600
> 600	≤ 900	600	600	900
> 900	≤ 1200	600	900	1000
> 1200		900	900	1000

AS3500.3
MINIMUM GRADIENT OF SITE STORMWATER DRAINS

NOMINAL SIZE	MINIMUM GRADIENT		NOMINAL SIZE	MINIMUM GRADIENT	
DN	AU	NZ	DN	AU	NZ
90	1:100	1:90	225	1:200	1:350
100	1:100	1:120	300	1:250	1:350
150	1:100	1:200	375	1:300	1:350

AS3500.3
TABLE 7.1: MINIMUM PIPE COVER
(FROM FINISHED SURFACE TO TOP OF PIPE)

LOCATION	CAST IRON, DUCTILE IRON, GALVANIZED STEEL	OTHER AUTHORIZED(*) PRODUCTS
	MINIMUM COVER (millimeters)	
1 NOT SUBJECT TO VEHICULAR LOADING		
(A) WITHOUT PAVEMENT -		
(i) FOR SINGLE DWELLINGS	NIL	100
(ii) FOR OTHER THAN ITEM (i)	NIL	300
(B) WITH PAVEMENT OF BRICK OR UNREINFORCED CONCRETE	NIL (†)	50 (†)
2 SUBJECT TO VEHICULAR LOADING		
(A) OTHER THAN ROADS -		
(i) WITHOUT PAVEMENT	300	450
(ii) WITH PAVEMENT OF -		
(A) REINFORCED CONCRETE FOR HEAVY VEHICULAR LOADING	NIL (††)	100 (††)
(B) BRICK OR UNREINFORCED CONCRETE FOR LIGHT VEHICULAR LOADING	NIL (††)	75 (††)
(B) ROADS -		
(i) SEALED	300	500 (††)
(ii) UNSEALED	300	500 (††)
3 SUBJECT TO CONSTRUCTION EQUIPMENT LOADING OR IN EMBANKMENT CONDITIONS	300	500 (††)

(*) INCLUDE OVERLAY ABOVE THE TOP OF THE PIPE OF NOT LESS THAN 50mm THICK.
(†) BELOW THE UNDERSIDE OF THE PAVEMENT.
(‡) SUBJECT TO COMPLIANCE WITH AS1762, AS2033, AS/NZS 2566.1, AS3725 OR AS4060.

DRAWING REGISTER

NUMBER	NAME	REVISION
SW01	COVER SHEET	A
SW02	SPECIFICATIONS SHEET	A
SW11	STORMWATER PLAN - GROUND FLOOR	A
SW12	STORMWATER PLAN - LEVEL 1	A
SW13	STORMWATER PLAN - ROOF LEVEL	A
SW20	STORMWATER DETAILS - SHEET 1	A
SW21	STORMWATER DETAILS - SHEET 2	A

BEFORE YOU DIG www.byda.com.au

BEFORE YOU DIG AUSTRALIA SHOULD BE CONTACTED PRIOR TO ANY EXCAVATION ON SITE

TM: TRADE MARK OF THE ASSOCIATION OF DIAL BEFORE YOU DIG SERVICES LTD. USED UNDER LICENSE.

SERVICES SHOWN ON PLAN ARE INDICATIVE, EXACT DEPTH AND LOCATION TO BE CONFIRMED ONSITE. CONTRACTOR TO CARRY OUT BEFORE YOU DIG AUSTRALIA APPLICATION AND ENGAGE A REGISTERED SURVEYOR TO PEG OUT ALL EXISTING SERVICES PRIOR TO ANY WORK COMMENCING ONSITE.

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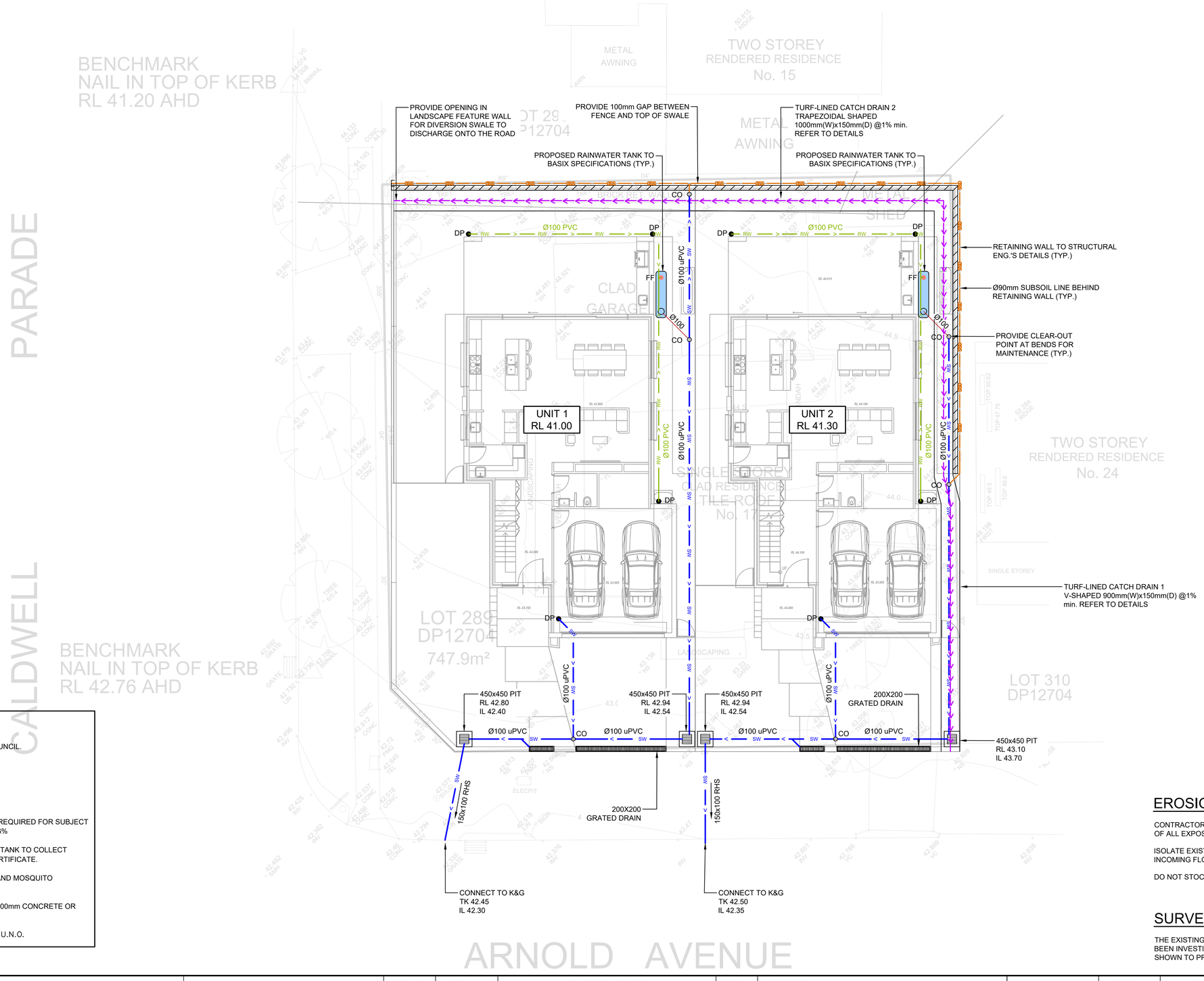
SITE ADDRESS: 17 CALDWELL PARADE, YAGOONA NSW 2199

DESIGNED BY:	D.S.	ISSUE:	SPECIFICATIONS SHEET
CHECKED BY:	D.S.	B	
SCALE:	1:100		
CLIENT REF:	JOB NO:	SHEET NO:	
-	VSW24840	SW02	



DESIGN NOTES:

THE SITE IS LOCATED IN CANTERBURY-BANKSTOWN COUNCIL.

SITE AREA = 747.9m²
UNIT 1 IMPERVIOUS AREA = 222.9m²
UNIT 2 IMPERVIOUS AREA = 216.1m²
TOTAL IMPERVIOUS AREA = 439m²
TOTAL FRACTION IMPERVIOUS = 58.7%

IN ACCORDANCE TO COUNCIL GUIDELINES, OSD IS NOT REQUIRED FOR SUBJECT DEVELOPMENT SINCE IMERVIOUS AREA IS LESS THAN 66%

CONTRACTOR TO INSTALL ABOVE GROUND RAINWATER TANK TO COLLECT REQUIRED ROOF AREA IN ACCORDANCE WITH BASIX CERTIFICATE.

RAINWATER TANK TO BE EQUIPPED WITH FIRST FLUSH AND MOSQUITO PROTECTION DEVICES.

ALL NEW STORMWATER PIPES TO HAVE A MINIMUM OF 100mm CONCRETE OR 300mm TOPSOIL COVER U.N.O.

ALL DOWNPIPES SHOWN ON PLAN ARE ø100mm uPVC U.N.O.

EROSION & SEDIMENT CONTROL NOTES:

CONTRACTOR TO PROVIDE SILT FENCE/HAY BAIL BARRIERS TO THE LOW SIDE OF ALL EXPOSED EARTH EXCAVATIONS (TYP).

ISOLATE EXISTING STORMWATER PITS WITH HAY BALES TO FILTER ALL INCOMING FLOWS.

DO NOT STOCK PILE EXCAVATED MATERIAL ON THE ROAD WAY.

SURVEY

THE EXISTING SITE CONDITIONS SHOWN ON THE FOLLOWING DRAWINGS HAVE BEEN INVESTIGATED BY REGISTERED SURVEYORS. THE INFORMATION IS SHOWN TO PROVIDE A BASIS FOR DESIGN.

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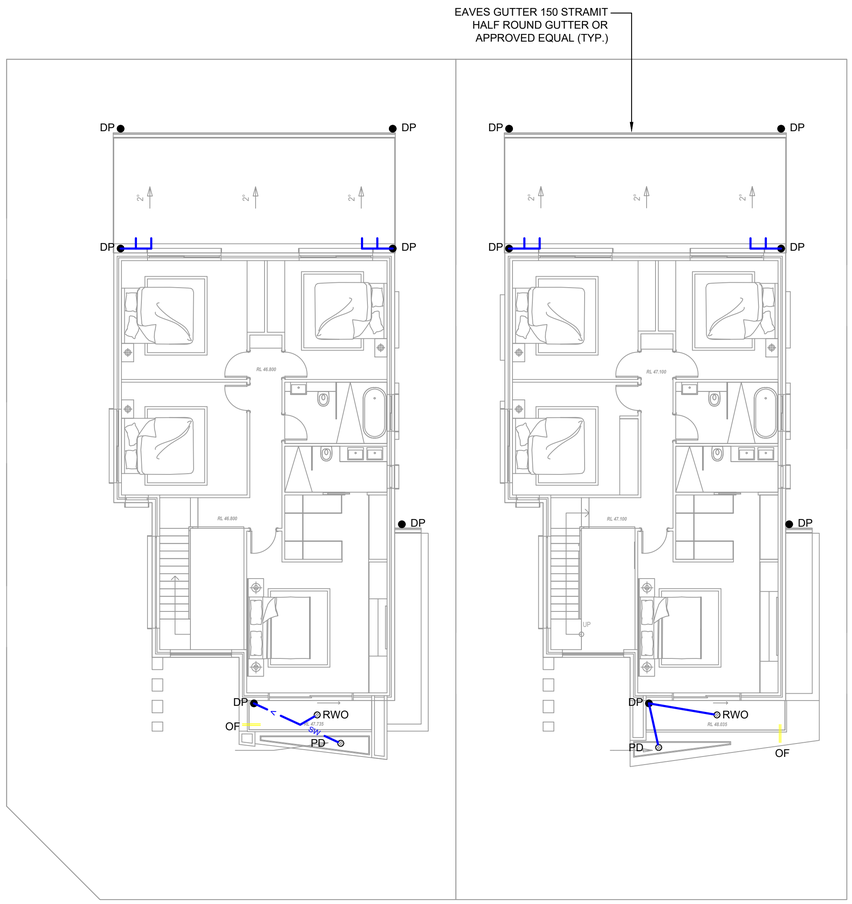
-	VSW24840	SW11

STORMWATER PLANS GROUND LEVEL



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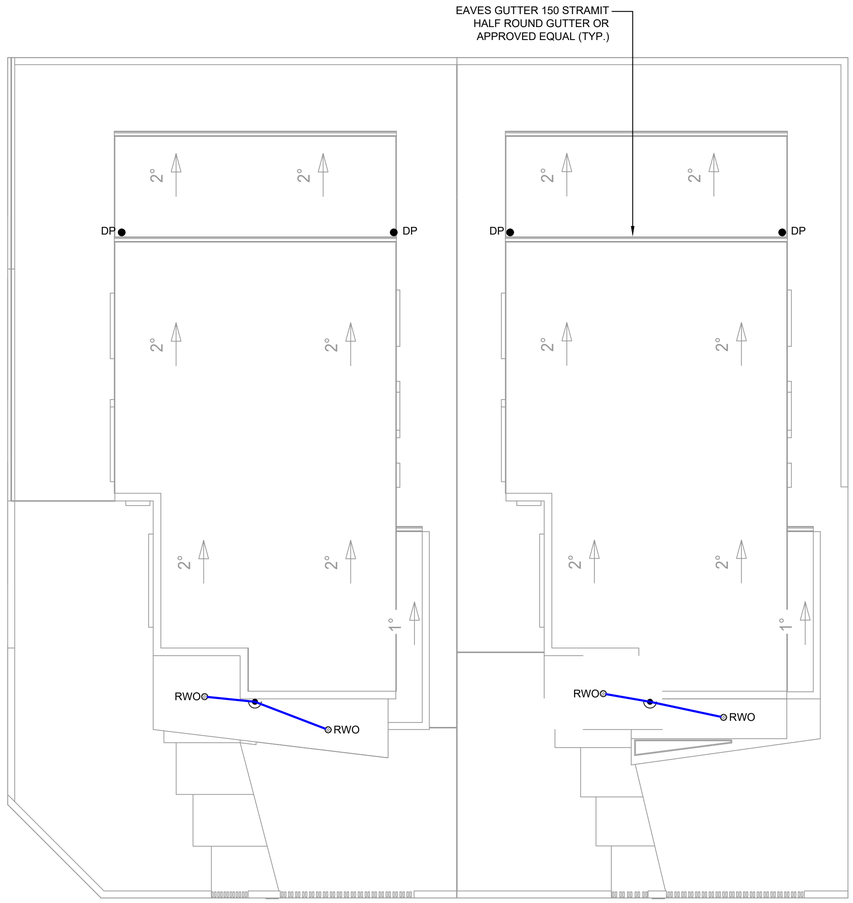
STORMWATER PLANS
LEVEL 1



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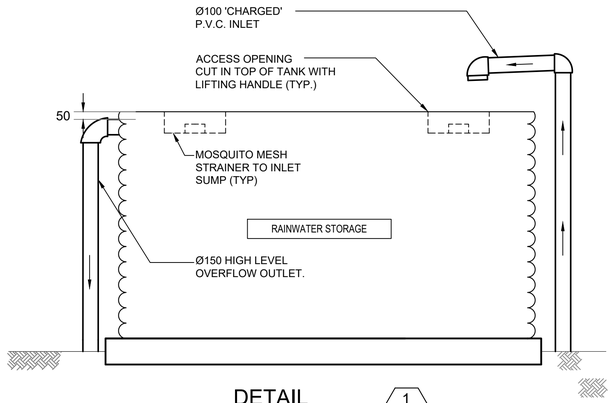
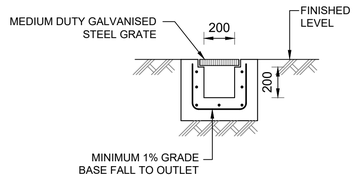
STORMWATER PLANS ROOF



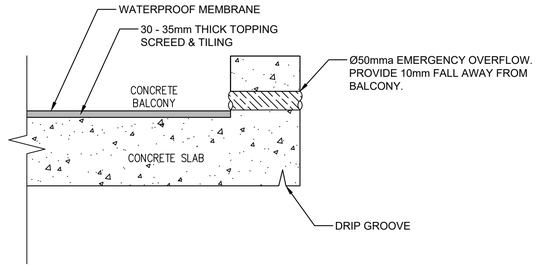
DETAIL 1 / -
TYPICAL ABOVE GROUND
RAINWATER TANK
NOT TO SCALE

LEGEND:
BACKGROUND IS YELLOW
TEXT IS WHITE ON BLACK
BACKGROUND

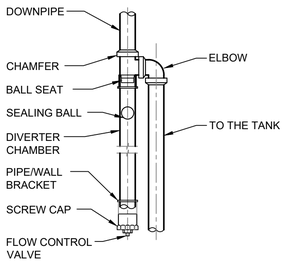
DETAIL 2 / -
RAINWATER SIGN
SCALE 1:10



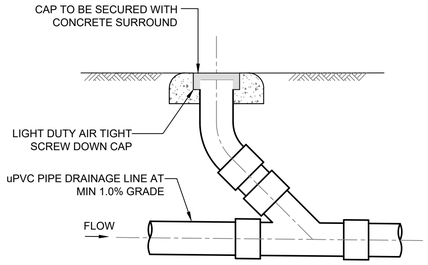
DETAIL 3 / -
GRATED DRAIN
SCALE 1:20



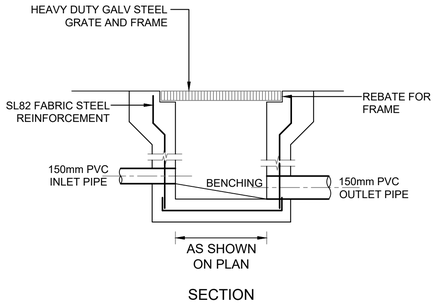
DETAIL 4 / -
BALCONY OVERFLOW
SCALE 1:20



DETAIL 5 / -
FIRST FLUSH DIVERTER
SCALE 1:20

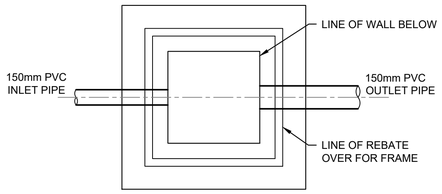


DETAIL 6 / -
CLEANING EYE
SCALE 1:20

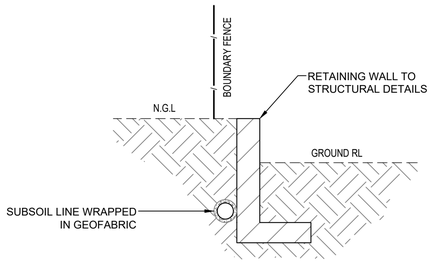


SECTION

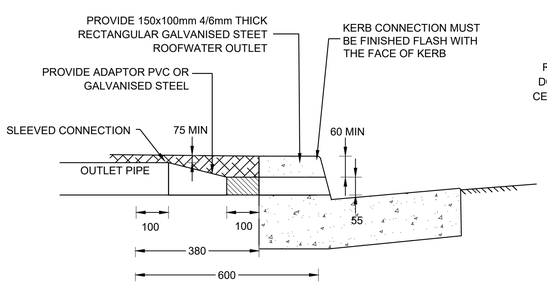
DETAIL 7 / -
STORMWATER PIT
SCALE 1:20



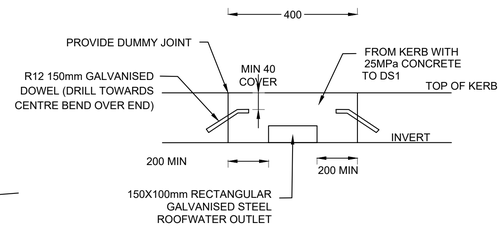
PLAN WITHOUT GRATE



DETAIL 8 / -
SUBSOIL BEHIND RETAINING WALL
SCALE NTS



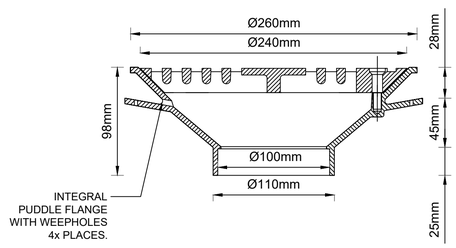
SECTION VIEW

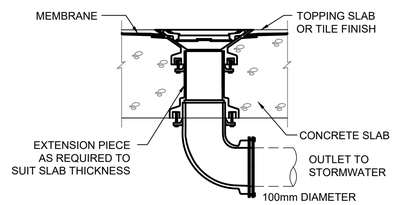


FRONT VIEW SECTION

DETAIL 9 / -
KERB OUTLET CONNECTION
NOT TO SCALE

NOTES FOR KERB CONNECTION
1. ENSURE THAT ALL CONNECTIONS ARE WATER TIGHT.
2. FOR TRAFFICABLE AREA SUCH AS DRIVERWAYS, USE RECTANGULAR GALVANISED STEEL OUTLET PIPE FOR FULL LENGTH, EG. BOUNDARY TO KERB.
3. ALL DEMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.





DETAIL 10 / -
TYPE SPS
RAINWATER OUTLET
NOT TO SCALE

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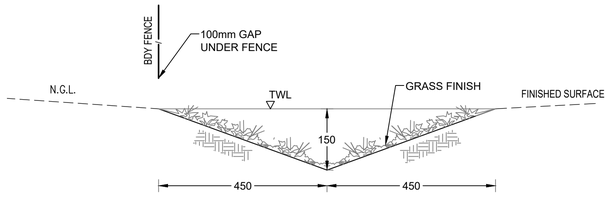
-	VSW24840	SW20

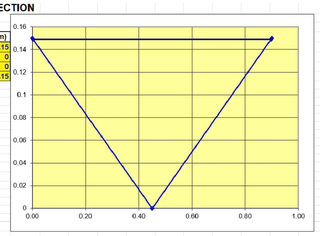
STORMWATER DETAILS
SHEET 1



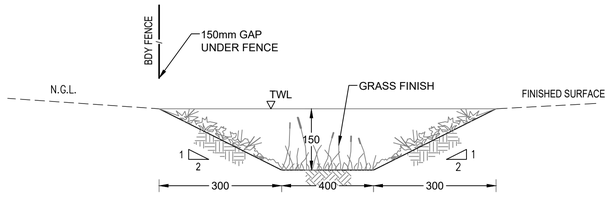
DETAIL 11
V-SHAPED CATCH DRAIN 1
SCALE NTS

CAPACITY OF CHANNEL SECTION

Channel Coordinates	
X (m)	Y (m)
0	0.15
0.45	0
0.45	0
0.9	0.15



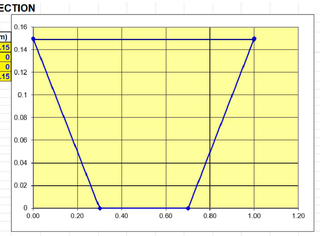
Xl =	0.00
Xr =	0.90
Case 1	TRUE
Case 2	FALSE
Case 3	FALSE
Water Level	0.15 m
Flow width	0.894 m
A	0.066603 m2
P	0.942358743 m
Rh	0.070676906 m
Manning's "n"	0.035
Channel Slope	0.01 m/m
Q =	0.03 m3/s
V =	0.49 m/s
VD =	0.07
Froude's =	0.57 SUBCRITICAL FLOW



DETAIL 12
TRAPEZOIDAL SHAPED CATCH DRAIN 2
SCALE NTS

CAPACITY OF CHANNEL SECTION

Channel Coordinates	
X (m)	Y (m)
0	0.15
0.3	0
0.7	0
1	0.15



Xl =	0.00
Xr =	1.00
Case 1	TRUE
Case 2	FALSE
Case 3	FALSE
Water Level	0.15 m
Flow width	0.996 m
A	0.104002 m2
P	1.060340257 m
Rh	0.097530999 m
Manning's "n"	0.035
Channel Slope	0.01 m/m
Q =	0.06 m3/s
V =	0.61 m/s
VD =	0.09
Froude's =	0.60 SUBCRITICAL FLOW

UPSTREAM CATCHMENT PLAN
NOT TO SCALE

UPSTERAM CATCHMENT FLOW CALCULATION:

Q = cIA
c = 1 (CONSERVATIVE)
I (100-YR, 5min) = 204mm/hr

A_1 = 540m2
Q_1 = 1 x 540 x 204 / 3600 = 30.6 L/s

A_2 = 990m2
Q_2 = 1 x 990 x 204 / 3600 = 56.1 L/s

VANGUARD | CONSULTING ENGINEERS

OFFICE 3.07 LEVEL 3
14-16, LEXINGTON DRIVE
BELLA VISTA, 2154

M: (02) 9145 0253

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ADMIN@VCENG.COM.AU

DRAWN	DATE	DESCRIPTION	ISSUE
D.S.	23.06.2024	ISSUED FOR D.A.	A
D.S.	01.08.2024	ISSUED FOR D.A.	B

CLIENT	
-	
SITE ADDRESS	
17 CALDWELL PARADE, YAGOONA NSW 2199	

DESIGNED BY:	D.S.	ISSUE:
CHECKED BY:	D.S.	B
SCALE:	1:100	
CLIENT REF:	JOB NO:	SHEET NO:
-	VSW24840	SW21

STORMWATER DETAILS
SHEET 2