STORMWATER MANAGEMENT PLAN
PROPOSED RESIDENTIAL ALTS & ADS
139 GEORGE ST, AVALON BEACH

GENERAL

1. THIS PLAN IS TO BE USED IN CONJUNCTION WITH ARCHITECTURAL, STRUCTURAL, & LANDSCAPING PLANS. ANY DISCREPANCIES OR OMISSIONS ARE TO BE REFERRED TO THE ENGINEER FOR RESOLUTION PRIOR TO COMMENCING WORK.
2. ALL MATERIALS AND WORKMANSHIP IS TO MEET AS 3500.3:2015 STORMWATER DRAINAGE, BCA AND LOCAL COUNCIL DEVELOPMENT POLICIES, CONSENTS AND REQUIREMENTS.
3. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND DRAINAGE LEVELS ON SITE PRIOR TO COMMENCEMENT OF WORKS. THIS INCLUDES EXISTING SERVICES AND/OR OTHER STRUCTURES THAT MAY AFFECT/BE AFFECTED BY THIS DESIGN PRIOR TO CONSTRUCTION.
4. THIS DRAWING IS NOT TO BE USED FOR SET-OUT PURPOSES. .ALL SURVEY INFORMATION, PROPOSED BUILDING LEVELS, FINISHED SURFACE LEVELS AND SITE DETAILS SHOWN IN THESE DRAWINGS ARE ESTABLISHED UPON LEVELS/DETAILS SUPPLIED BY OTHERS.
5. FLOOR WASTE & DOWNPIPE LOCATIONS ARE INDICATIVE ONLY. ULTIMATE FLOOR WASTE & DOWNPIPE LOCATION, SIZE, & QUANTITY ARE TO BE DETERMINED BY BUILDER IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS.
6. IT IS THE BUILDERS RESPONSIBILITY TO LOCATE AND LEVEL ALL EXISTING SERVICES OR OTHER STRUCTURES WHICH MAY AFFECT/BE AFFECTED BY THIS DESIGN PRIOR TO COMMENCEMENT OF WORKS.
7. ANY SUBSTITUTION OF MATERIALS SHALL BE APPROVED BY THE ENGINEER AND INCLUDED IN THE DEVELOPMENT APPLICATION.
8. CONTRACTORS ARE TO INVESTIGATE ALL EXISTING SERVICES AND APPLY FOR "DIAL BEFORE YOU DIG" PRIOR TO COMMENCEMENT OF CONSTRUCTION.

COMPLIANCE

1. THESE PLANS WERE PREPARED IN ACCORDANCE WITH COUNCIL'S POLICIES AND REQUIREMENTS, BASIX REQUIREMENTS, AS 3500:2013, ARR (2016), ARQ (2006), BCA (2015), RELEVANT LEGISLATION, AND NSW MUSIC MODELLING GUIDELINES.

SCOPE OF WORKS

1. DETAILED DESIGN, MODELLING AND DOCUMENTATION FOR THE FOLLOWING (WHERE APPLICABLE): ROOFED, IMPERVIOUS AND PERVIOUS AREAS; RAINWATER REUSE SYSTEM; OSD; AND STORMWATER DISPOSAL.

RAINWATER RE-USE SYSTEM

1. ALL GUTTERS TO BE FITTED WITH LEAF GUARDS AND SUBJECT TO REGULAR INSPECTION / CLEAN OUT.
2. MIN. TANK SIZE TO BE THAT SPECIFIED WITHIN DETAIL AND PLAN.
3. TANKS ARE TO BE INSTALLED BY A LICENSED PLUMBER IN ACCORDANCE WITH MANUFACTURES SPECIFICATIONS, AS3500 AND COUNCIL REQUIREMENTS.
4. RAINWATER RETENTION FOR RE-USE AS SPECIFIED BY BASIX CERTIFICATE.

MINIMUM PIPE COVER

O.L OF PIPE TO F.S.L

LOCATION	MIN. COVER (mm)	
	CAST IRON, DUCTILE IRON, GALV. STEEL	OTHER AUTHORISED PRODUCTS[1]
1. NOT SUBJECT TO VEHICULAR LOADING:		
a. WITHOUT PAVEMENT-		
i. FOR SINGLE DWELLINGS	0	100
ii. FOR ITEMS OTHER THAN i.	0	300
b. WITH PAVEMENT OF BRICK OR UNREINFORCED CONCRETE	0 [2]	50 [2]
2. SUBJECT TO VEHICULAR LOADING:		
a. OTHER THAN ROADS-		
i. WITHOUT PAVEMENT	300	450
ii. WITH PAVEMENT OF:		
- REINFORCED CONCRETE FOR HEAVY VEHICULAR LOADINGS	0 [2][3]	100 [2][3]
- BRICK/UNREINFORCED CONCRETE FOR LIGHT VEHICULAR LOADING	0 [2][3]	75 [2][3]
b. ROADS-		
i. SEALED	300	500 [3]
ii. UNSEALED	300	500 [3]
3. SUBJECT TO CONSTRUCTION EQUIPTMENT OR IN EMBANKMENT CONDITIONS	300	500 [3]

[1] INCLUDES OVERLAY ABOVE TOP OF THE PIPE NOT LESS THAN 50mm THICK
[2] BELOW THE UNDERSIDE OF THE PAVEMENT
[3] SUBJECT TO COMPLAINCE WITH AS 1762, AS 2033, AS 2566.1, AS 3725, AS 4060

DRAINAGE LINES

1. MINIMUM PIPE GRADE AS SPECIFIED IN TABLE BELOW. MINIMUM DIAMETER IS TO BE (U.N.O):
   a. Ø100mm WHERE LINE RECEIVES ROOF WATER.
   b. Ø150mm WHERE LINE RECEIVES RUN-ON FROM PAVED/UNPAVED EXTERNAL SURFACES
2. PIPE EMBEDMENT IS TO BE IN ACCORDANCE WITH LOCAL AUTHORITY SPEC., AS 3500.3, AS 2032 FOR PVC, & AS 3725 FOR FCR/RCP PIPEWORK.
3. SUBSOIL DRAINAGE SHALL BE PROVIDED TO ALL RETAINING WALLS AND EMBANKMENTS WITH THE LINES FEEDING INTO THE STORMWATER DRAINAGE SYSTEM.

MINIMUM SITE PIPE GRADIENT (U.N.O)

DIAMETER Ø (mm)	MIN. GRADE	MIN. % SLOPE
≤ Ø150	1:100	1%
225	1:200	0.5%
300	1:250	0.4%
375	1:300	0.33%

MINIMUM INTERNAL DIMENSIONS FOR STORMWATER PITS

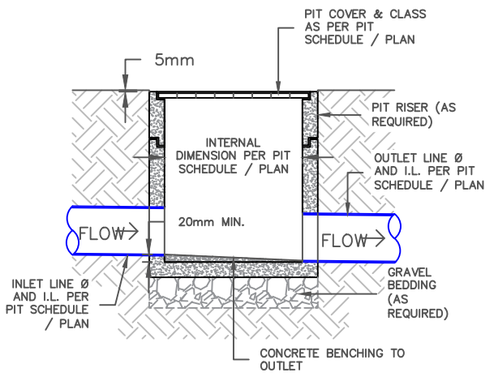
DEPTH TO I.L OF OUTLET(mm)	MIN. INTERNAL DIMENSIONS (mm)	
	WIDTH	LENGTH
≤ 600	450	450
> 600 TO ≤ 900	600	600
> 600 TO ≤ 900	600	900
> 1200	900	900

PITS

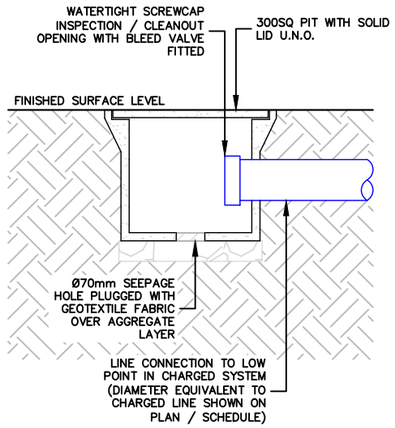
1. ALL PITS TO BE FITTED WITH APPROVED GALAVANISED STEEL GRATES AND TO BE SUITABLE FOR THE FOLLOWING LOAD RATING (U.N.O):
   a. CLASS-B MIN. FOR LANDSCAPED AREAS
   b. CLASS-C WHERE SUBJECT TO VEHICULAR TRAFFIC
2. ALL PITS FITTED WITH CHILDPROOF SPRING LOCKING J-BOLTS.
3. GRATED COVERS OF PITS > 600SQ mm ARE TO BE HINGED & OFFSET FROM OBSTRUCTIONS TO ALLOW FOR FULL OPENING.
4. PROVIDE STEP IRONS TO STORMWATER PITS > 1200mm IN DEPTH.
5. PIT BASES ARE TO BE BENCHED LEVEL TO THE I.L OF THE OUTLET PIPE (NO SUMP U.N.O), WITH A MIN. FALL OF 20mm BETWEEN THE INLET AND OUTLET PIPE I.L.s. ALL PIPES SHOULD BE CUT FLUSH WITH THE WALL OF THE PITS.
6. PRECAST PITS ARE TO BE SET ON A 75mm CONCRETE BASE AND BACKFILLED WITH CONCRETE TO HALF THE PIT'S HEIGHT.
7. WATER SHOULD NOT BE PERMITTED TO POND WITHIN THE DRAINAGE SYSTEM.

ABBREVIATIONS

A.H.D	AUSTRALIAN HEIGHT DATUM	N.T.S	NOT TO SCALE
A.R.I	AVERAGE RECURRENCE INTERVAL	O.F	OVERFLOW
C.O	CLEAN-OUT PIT	O.L.	OBVERT LEVEL
DP	DOWNPIPE	O.S.D	ON-SITE DETENTION
D/S	DOWNSTREAM	R.C.P	REINFORCED CONCRETE PIPE
FF	FIRST FLUSH DEVICE	R.H.S	RECTANGULAR HOLLOW SECTION
F.F.L	FINISHED FLOOR LEVEL	R.L.	REDUCED LEVEL
F.G.L	FINISHED GARAGE LEVEL	R.W.T	RAIN-WATER TANK
F.W	FLOOR WASTE	S.L	SURFACE LEVEL
G.S.I.P	GRATED SURFACE INLET PIT	SQ	SQUARE
H.G.L	HYDRAULIC GRADE LINE	TYP.	TYPICAL
I.L.	INVERT LEVEL	T.W.L	TOP WATER LEVEL
I.P	INSPECTION POINT	U/S	UPSTREAM
N.S.L.	NATURAL SURFACE LEVEL	U.N.O	UNLESS NOTED OTHERWISE



GRATED SURFACE INLET PIT (GSIP) – TYPICAL SECTION DETAIL
SCALE: N.T.S.



CHARGED LINE CLEAN-OUT PIT (CO) – TYPICAL SECTION DETAIL
SCALE: N.T.S.

ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.

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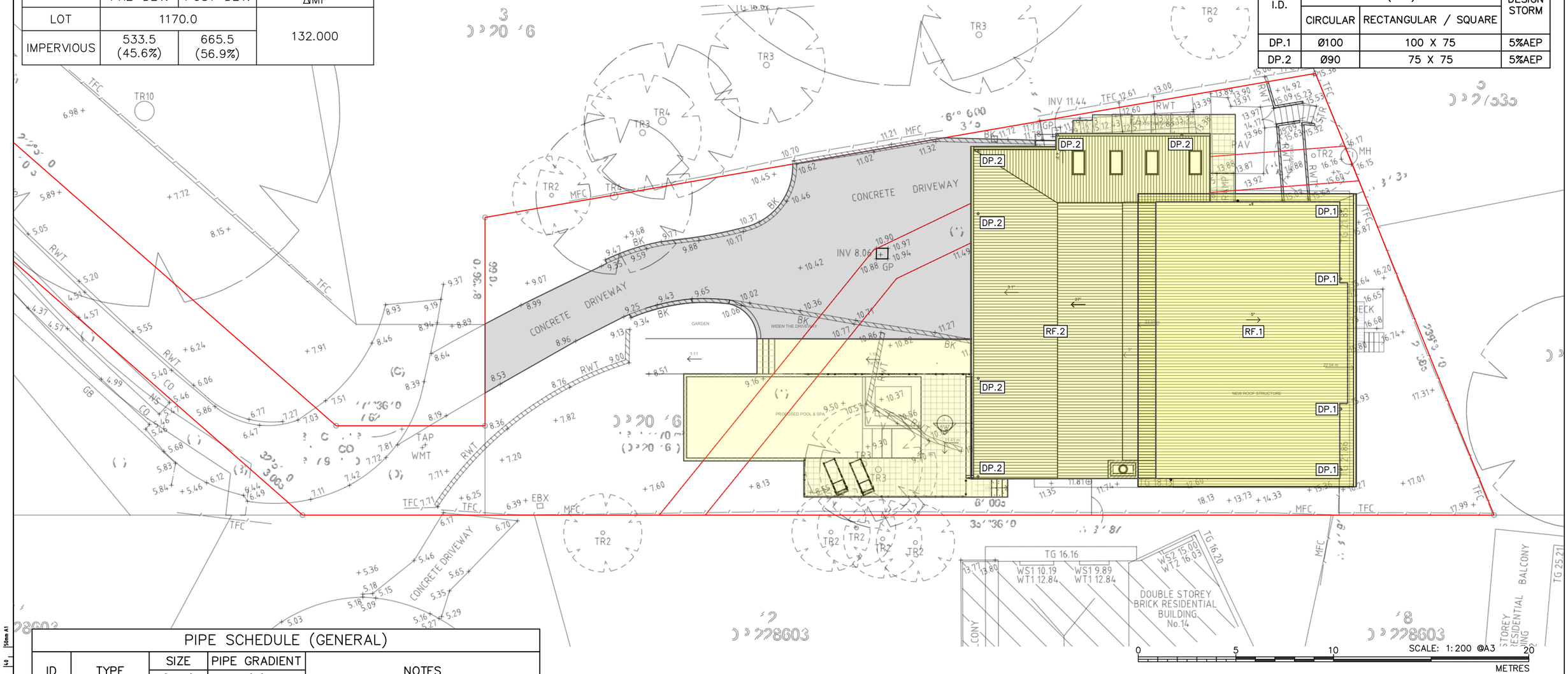
PROJECT DESCRIPTION: PROPOSED RESIDENTIAL ALTS & ADS	SHEET: TITLE PAGE & GENERAL NOTES
PROJECT SITE: 139 GEORGE ST, AVALON BEACH	PLAN: STORMWATER MANAGEMENT PLAN
LGA: NORTHERN BEACHES COUNCIL	CLIENT: BLUE SKY BUILDING DESIGN

PROJECT ID: 1813-SW
SCALE: NTS @ A3, NTS @ A1
SHEET NO.: 1 OF 7

CATCHMENT AREA CALCULATIONS [M²]			
I.D	DEVELOPMENT CONDITION		CHANGE IN IMPERVIOUS AREA 'ΔIMP'
	PRE–DEV.	POST–DEV.	
LOT	1170.0		132.000
IMPERVIOUS	533.5 (45.6%)	665.5 (56.9%)	

DOWNPIPE & SPREADER SCHEDULE			
I.D.	MINIMUM DIMENSIONS (INTERNAL) (mm)		DESIGN STORM
	CIRCULAR	RECTANGULAR / SQUARE	
DP.1	Ø100	100 X 75	5%AEP
DP.2	Ø90	75 X 75	5%AEP



PIPE SCHEDULE (GENERAL)				
ID	TYPE	SIZE (mm)	PIPE GRADIENT (%)	NOTES
RW1	uPVC DWV	Ø100	1	CHARGED RAINWATER LINES TO TANK
SW1	uPVC	Ø90	1–10	BALCONY DRAINAGE LINE
SW2	uPVC	Ø100	1–10	SURFACE DRAINAGE LINE
SW3	uPVC	Ø150	1–10	SURFACE DRAINAGE LINE

KEY

ROOF DRAINAGE LINE		SURFACE FLOW DIRECTION	
SURFACE DRAINAGE LINE		GRATED SURFACE INLET PIT (G.S.I.P)	
PROPERTY BOUNDARY	VR	VD	VERTICAL RISER / VERTICAL DROPPER
CO	CLEAN OUT PIT	DP.1 SP.1	DOWNPIPE / SPREADER TYPE 1

GENERAL NOTES – LGA CONTROLS & OSD WARRANT

1. DEVELOPMENT: RESIDENTIAL, REGION 1, INCREASE IN IMPERVIOUS AREA POST–DEV >50m2 IMPERVIOUS. PER NBC (2020) WMDP OSD IS REQUIRED.
2. PER TABLE 7 SECTION 9.3.1 OF WMDP2020 A 100–150m2 ΔIMP_A REQUIRES 9.0kL OSD STORAGE w/ 4L/S DISCHARGE.
3. PRESENT SITE DISCHARGE TO CAREEL BAY CRES EASEMENT PIT, CONTINUED USE OF EXISTING DISCHARGE ARRANGEMENT PROPOSED.

ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.

ROOF DRAINAGE SCHEDULE								
ROOF I.D.	DESCRIPTION	MATERIAL	PITCH	DP I.D	MIN. NO. OF DPs / SPs	MIN. GUTTER CROSS–SECTIONAL AREA (A_e)(mm²)	GUTTER GRADE	DESIGN STORM
RF.1	2ND FLOOR ROOF	COLORBOND	5°	DP.1	4	7,500	≥1:500	5%AEP
RF.2	1ST FLOOR ROOF	COLORBOND	3.1–27	DP.2	6	6,000	≥1:500	5%AEP

REV	DATE	DES.	DRN.	APP.	REVISION DETAILS
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PROJECT DESCRIPTION: PROPOSED RESIDENTIAL ALTS & ADS	SHEET: ROOF DRAINAGE PLAN
PROJECT SITE: 139 GEORGE ST, AVALON BEACH	PLAN: STORMWATER MANAGEMENT PLAN
LGA: NORTHERN BEACHES COUNCIL	CLIENT: BLUE SKY BUILDING DESIGN

PROJECT ID: 1813-SW
SCALE: 1:150 @ A3, 1:75 @ A1
SHEET NO.: 2 OF 7

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CATCHMENT AREA CALCULATIONS [M²]			
I.D	DEVELOPMENT CONDITION		CHANGE IN IMPERVIOUS AREA 'ΔIMP'
	PRE–DEV.	POST–DEV.	
LOT	1170.0		132.000
IMPERVIOUS	533.5 (45.6%)	665.5 (56.9%)	

DOWNPIPE & SPREADER SCHEDULE			
I.D.	MINIMUM DIMENSIONS (INTERNAL) (mm)		DESIGN STORM
	CIRCULAR	RECTANGULAR / SQUARE	
DP.1	Ø100	100 X 75	5%AEP
DP.2	Ø90	75 X 75	5%AEP

GRADE BALCONIES TO Ø90mm FLOOR WASTES @ 1:80 INFALL.

BALCONY SPACES TO BE WATERPROOFED TO AS4654. INTERLOCK FLOOR WASTE TO WATERPROOF MEMBRANE PER MANUFACTURES SPECIFICATIONS.

SCALE: 1:200 @A3

0 5 10 20 METRES

PIPE SCHEDULE (GENERAL)				
ID	TYPE	SIZE (mm)	PIPE GRADIENT (%)	NOTES
RW1	uPVC DWV	Ø100	1	CHARGED RAINWATER LINES TO TANK
SW1	uPVC	Ø90	1–10	BALCONY DRAINAGE LINE
SW2	uPVC	Ø100	1–10	SURFACE DRAINAGE LINE
SW3	uPVC	Ø150	1–10	SURFACE DRAINAGE LINE

KEY

- ROOF DRAINAGE LINE
- SURFACE DRAINAGE LINE
- PROPERTY BOUNDARY
- CO — CLEAN OUT PIT
- SURFACE FLOW DIRECTION
- GRATED SURFACE INLET PIT (G.S.I.P)
- VR / VD — VERTICAL RISER / VERTICAL DROPPER
- DP.1 / SP.1 — DOWNPIPE / SPREADER TYPE 1

GENERAL NOTES – LGA CONTROLS & OSD WARRANT

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3. PRESENT SITE DISCHARGE TO CAREEL BAY CRES EASEMENT PIT, CONTINUED USE OF EXISTING DISCHARGE ARRANGEMENT PROPOSED.

ROOF DRAINAGE SCHEDULE								
ROOF I.D.	DESCRIPTION	MATERIAL	PITCH	DP I.D	MIN. NO. OF DPs / SPs	MIN. GUTTER CROSS–SECTIONAL AREA (A_e)(mm²)	GUTTER GRADE	DESIGN STORM
RF.1	2ND FLOOR ROOF	COLORBOND	5°	DP.1	4	7,500	≥1:500	5%AEP
RF.2	1ST FLOOR ROOF	COLORBOND	3.1–27	DP.2	6	6,000	≥1:500	5%AEP

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PROJECT DESCRIPTION: PROPOSED RESIDENTIAL ALTS & ADS	SHEET: 2ND FLR - DRAINAGE PLAN
PROJECT SITE: 139 GEORGE ST, AVALON BEACH	PLAN: STORMWATER MANAGEMENT PLAN
LGA: NORTHERN BEACHES COUNCIL	CLIENT: BLUE SKY BUILDING DESIGN

PROJECT ID: 1813-SW
SCALE: 1:150 @ A3, 1:75 @ A1
SHEET NO.: 3 OF 7

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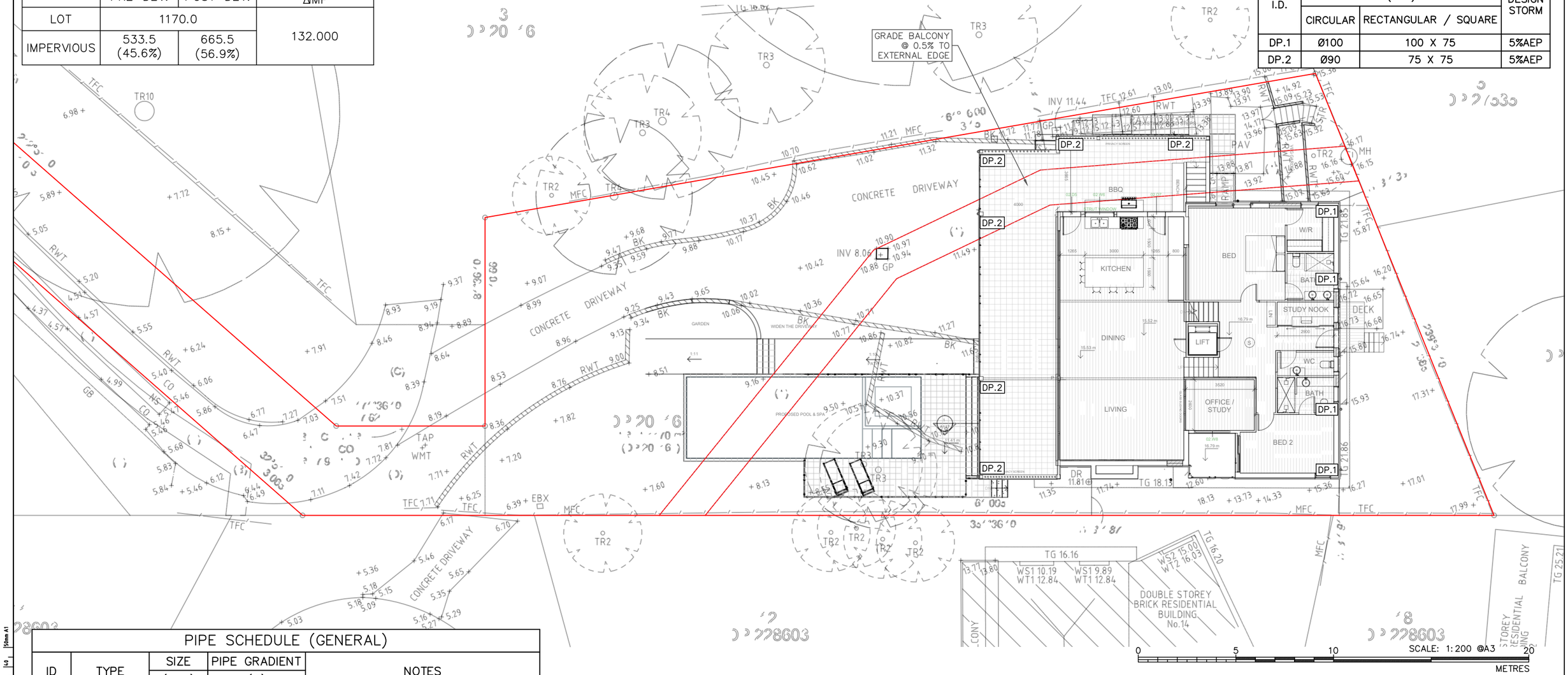
CATCHMENT AREA CALCULATIONS [M²]			
I.D	DEVELOPMENT CONDITION		CHANGE IN IMPERVIOUS AREA 'ΔIMP'
	PRE–DEV.	POST–DEV.	
LOT	1170.0		132.000
IMPERVIOUS	533.5 (45.6%)	665.5 (56.9%)	

DOWNPIPE & SPREADER SCHEDULE			
I.D.	MINIMUM DIMENSIONS (INTERNAL) (mm)		DESIGN STORM
	CIRCULAR	RECTANGULAR / SQUARE	
DP.1	Ø100	100 X 75	5%AEP
DP.2	Ø90	75 X 75	5%AEP



PIPE SCHEDULE (GENERAL)				
ID	TYPE	SIZE (mm)	PIPE GRADIENT (%)	NOTES
RW1	uPVC DWV	Ø100	1	CHARGED RAINWATER LINES TO TANK
SW1	uPVC	Ø90	1–10	BALCONY DRAINAGE LINE
SW2	uPVC	Ø100	1–10	SURFACE DRAINAGE LINE
SW3	uPVC	Ø150	1–10	SURFACE DRAINAGE LINE

KEY

- ROOF DRAINAGE LINE
- SURFACE DRAINAGE LINE
- PROPERTY BOUNDARY
- CO — CLEAN OUT PIT
- SURFACE FLOW DIRECTION
- GRATED SURFACE INLET PIT (G.S.I.P)
- VR / VD — VERTICAL RISER / VERTICAL DROPPER
- DP.1 / SP.1 — DOWNPIPE / SPREADER TYPE 1

GENERAL NOTES – LGA CONTROLS & OSD WARRANT

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2. PER TABLE 7 SECTION 9.3.1 OF WMDP2020 A 100–150m2 ΔIMP_A REQUIRES 9.0kL OSD STORAGE w/ 4L/S DISCHARGE.
3. PRESENT SITE DISCHARGE TO CAREEL BAY CRES EASEMENT PIT, CONTINUED USE OF EXISTING DISCHARGE ARRANGEMENT PROPOSED.

ROOF DRAINAGE SCHEDULE								
ROOF I.D.	DESCRIPTION	MATERIAL	PITCH	DP I.D	MIN. NO. OF DPs / SPs	MIN. GUTTER CROSS–SECTIONAL AREA (A_e)(mm²)	GUTTER GRADE	DESIGN STORM
RF.1	2ND FLOOR ROOF	COLORBOND	5°	DP.1	4	7,500	≥1:500	5%AEP
RF.2	1ST FLOOR ROOF	COLORBOND	3.1–27	DP.2	6	6,000	≥1:500	5%AEP

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PROJECT DESCRIPTION: PROPOSED RESIDENTIAL ALTS & ADS	SHEET: 1ST FLR -DRAINAGE PLAN
PROJECT SITE: 139 GEORGE ST, AVALON BEACH	PLAN: STORMWATER MANAGEMENT PLAN
LGA: NORTHERN BEACHES COUNCIL	CLIENT: BLUE SKY BUILDING DESIGN

PROJECT ID	1813-SW
SCALE	1:150 @ A3 1:75 @ A1
SHEET NO.	4 OF 7

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CATCHMENT AREA CALCULATIONS [M^2]			
I.D	DEVELOPMENT CONDITION		CHANGE IN IMPERVIOUS AREA 'ΔIMP'
	PRE–DEV.	POST–DEV.	
LOT	1170.0		132.000
IMPERVIOUS	533.5 (45.6%)	665.5 (56.9%)	

[PIT A/2] 900SQ CLASS–b CONTROL PIT (SEALED LID)
S.L. 11.500
(PROVIDE J–BOLT LOCK & STEP IRONS PER DETAIL)

[PIT A/2] 900SQ CLASS–A SUMP PIT (SEALED LID)
S.L. 11.500
(PROVIDE J–BOLT LOCK & STEP IRONS PER DETAIL)

SITE DISCHARGE TO EASEMENT PIT VIA Ø150mm LINE @ I.L. 9.805

APPROXIMATE LOCATION OF Ø900mm LINE TO CAREEL BAY CRES PER NBC ONLINE MAPPING [SPI55497]

PROVIDED I.O AT GROUND LEVEL

[OSD.1] PRECAST BELOW GROUND CONCRETE FORMED O.S.D
TOTAL VOLUME: 14.50m3
EFFECTIVE OSD VOLUME: 12.07m3
MAX. DISCHARGE: 4 L/s
(REFER TO SH06 & SH07 FOR DETAILS)
OSD TO RECEIVE APPROX 575m2 CATCHMENT (ROOF, UPSLOPE LANDSCAPE, & ADDITIONAL GROUND FLOOR IMPERVIOUS AREAS)

[PIT B/1] 450SQ G.S.I.P
(CLASS–A)
S.L. 13.850
I.L. 13.400

SURFACE GRADE LANDSCAPE @ 1% MIN. GRADE TO PITS

[RWT1 & 2] ABOVE–GROUND RAINWATER TANKS FOR BASIX RE–USE (SEE SH06)

1xØ100mm V.D TO PIT A/3 (PER TANK)

PROVIDED Ø100mm FLOOR–WASTES (AS REQUIRED) AND DIRECT TO OSD

1xØ100mm V.R +F.F INLET PER TANK

[PIT A/3] 450SQ G.S.I.P (CLASS–A)
S.L. 13.700
I.L. 13.250
(INDUCE LOW–POINT IN CHARGED LINES AT THIS LOCATION AND PROVIDE CAPPED CLEAN–OUT POINTS)

CONCRETE DRIVEWAY

CARPORT

GARAGE
NO CHANGES

GAMES ROOM

WORKSHOP / STORAGE

LDRY

DECK

OSD.1

PATIO

PROPOSED POOL & SPA

DOUBLE STOREY BRICK RESIDENTIAL BUILDING No.14

SCALE: 1:200 @A3
0 5 10 20
METRES

KEY

- ROOF DRAINAGE LINE
- SURFACE DRAINAGE LINE
- PROPERTY BOUNDARY
- CO — CLEAN OUT PIT
- SURFACE FLOW DIRECTION
- GRATED SURFACE INLET PIT (G.S.I.P)
- VR VD — VERTICAL RISER / VERTICAL DROPPER
- DP.1 SP.1 — DOWNPIPE / SPREADER TYPE 1

PIPE SCHEDULE (GENERAL)				
ID	TYPE	SIZE (mm)	PIPE GRADIENT (%)	NOTES
RW1	uPVC DWV	Ø100	1	CHARGED RAINWATER LINES TO TANK
SW1	uPVC	Ø90	1–10	BALCONY DRAINAGE LINE
SW2	uPVC	Ø100	1–10	SURFACE DRAINAGE LINE
SW3	uPVC	Ø150	1–10	SURFACE DRAINAGE LINE

DOWNPIPE & SPREADER SCHEDULE			
I.D.	MINIMUM DIMENSIONS (INTERNAL) (mm)		DESIGN STORM
	CIRCULAR	RECTANGULAR / SQUARE	
DP.1	Ø100	100 X 75	5%AEP
DP.2	Ø90	75 X 75	5%AEP

GENERAL NOTES – LGA CONTROLS & OSD WARRANT

1. DEVELOPMENT: RESIDENTIAL, REGION 1, INCREASE IN IMPERVIOUS AREA POST–DEV >50m2 IMPERVIOUS. PER NBC (2020) WMDP OSD IS REQUIRED.
2. PER TABLE 7 SECTION 9.3.1 OF WMDP2020 A 100–150m2 ΔIMP_A REQUIRES 9.0kL OSD STORAGE w/ 4L/S DISCHARGE.
3. PRESENT SITE DISCHARGE TO CAREEL BAY CRES EASEMENT PIT, CONTINUED USE OF EXISTING DISCHARGE ARRANGEMENT PROPOSED.

ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.

REV	DATE	DES.	DRN.	APP.	REVISION DETAILS
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ROOF DRAINAGE SCHEDULE							
ROOF I.D.	DESCRIPTION	MATERIAL	PITCH	DP I.D	MIN. NO. OF DPs / SPs	MIN. GUTTER CROSS–SECTIONAL AREA (A_e)(mm^2)	GUTTER GRADE	DESIGN STORM
RF.1	2ND FLOOR ROOF	COLORBOND	5°	DP.1	4	7,500	≥1:500	5%AEP
RF.2	1ST FLOOR ROOF	COLORBOND	3.1–27	DP.2	6	6,000	≥1:500	5%AEP

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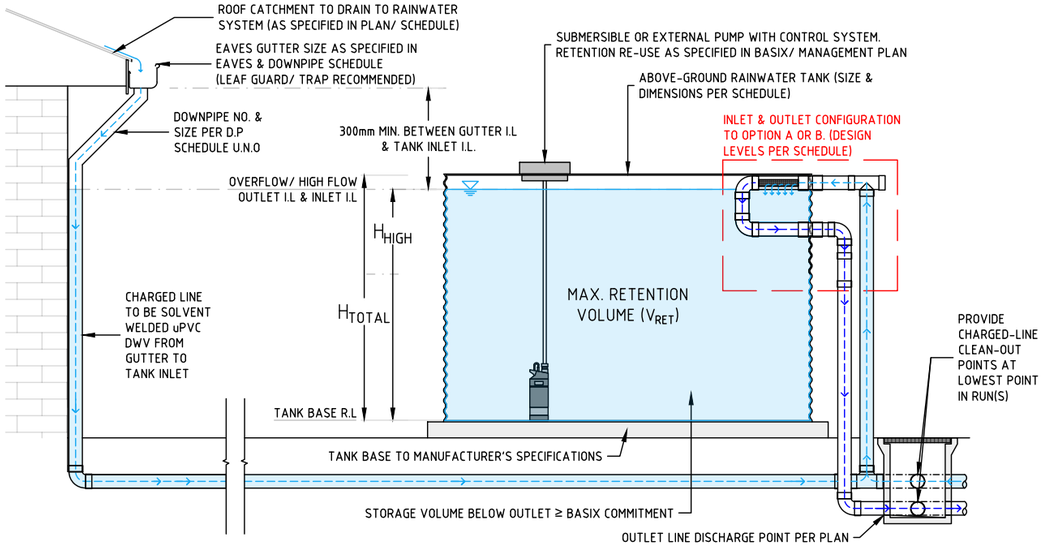
BROADCREST CONSULTING PTY LTD | ACN 622 508 187

PROJECT DESCRIPTION	PROPOSED RESIDENTIAL ALTS & ADS
PROJECT SITE	139 GEORGE ST, AVALON BEACH
LGA	NORTHERN BEACHES COUNCIL
SHEET	G FLOOR–DRAINAGE PLAN
PLAN	STORMWATER MANAGEMENT PLAN
CLIENT	BLUE SKY BUILDING DESIGN
PROJECT ID	1813–SW
SCALE	1:150 @ A3 1:75 @ A1
SHEET NO.	5 OF 7

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE MADE INCOMPLETE IF COPIED

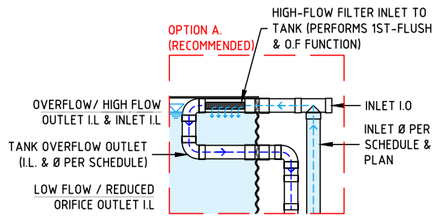


TYPICAL DETAIL - CHARGED LINE TO ABOVE GROUND RAINWATER TANK (RWT)

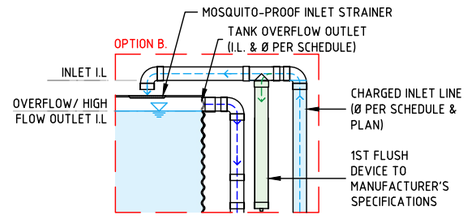
SCALE: N.T.S.

NOTES FOR CHARGED SYSTEM:

1. PLAN, DETAILS, & DIAGRAM ARE TO BE READ IN CONJUNCTION WITH MANUFACTURER SPECIFICATIONS FOR ALL PRODUCTS.
2. INLET/OUTLET CONFIGURATION CAN BE PROVIDED AT EITHER OR BOTH SIDES OF THE TANK(S).
3. AN OUTLET MUST BE PROVIDED WITH EACH INLET PIPE U.N.O.



Ⓐ HIGH FLOW TANK INLET WITH FILTER & INBUILT HIGH FLOW BYPASS



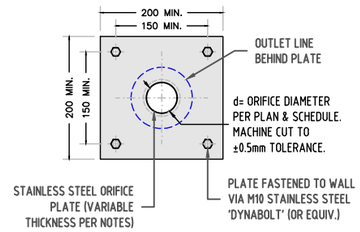
Ⓑ CONVENTIONAL TANK INLET & OUTLET WITH EXTERNAL 1ST-FLUSH

RAINWATER TANK SCHEDULE

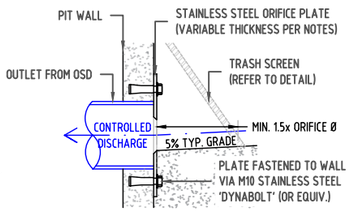
SYSTEM ID		RWT1 & 2
TYPE		2x TANKWORKS CORRUGATED SLIMLINE
TANK VOLUME (kL)		2x 2.51 (5.02 TOTAL)
TANK DIMENSIONS (m)		H: 2.02m, W: 0.6m, L: 2.2m
TANK BASE R.L. (m, AHD)		13.700
OVERFLOW OUTLET HEIGHT 'H_{HIGH}'	(m)	1.91
	I.L. (m, AHD)	15.610
HIGH FLOW OUTLET DIAMETER (mm)		1x Ø100 PER TANK
RETENTION VOLUME BELOW OUTLET (kL)		2.37 PER TANK (4.74 TOTAL)
AIR VOID VOLUME (kL)		NIL

COMMENTS: TANK OUTLETS TO ADJACENT PIT A/3. CONFIGURED FOR RE-USE PER BASIX CERTIFICATE. PROVIDE 1xØ100mm INLET LINE PER TANK VIA FIRST-FLUSH DEVICE. PROVIDE PRESSURE RATED BALANCE LINE BETWEEN TANKS AT BASE & Ø100mm BALANCE LINE AT I.L 13.700.

OSD STANDARD DETAILS BELOW

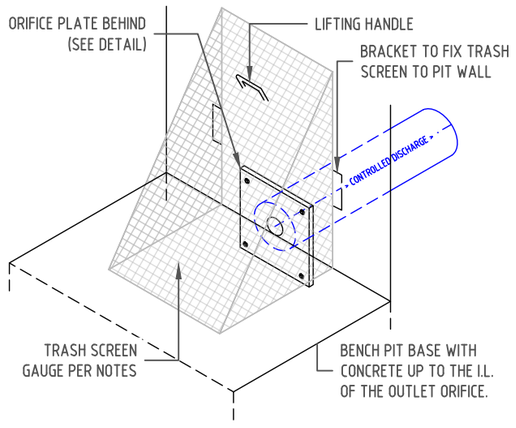


REDUCED ORIFICE PLATE- TYP. DETAIL
SCALE: 1:10 @A3



REDUCED ORIFICE ASSEMBLY- TYP. SECTION
SCALE: 1:10 @ A3

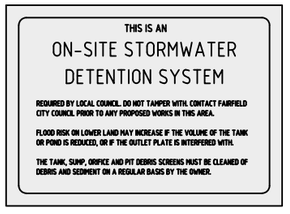
NOTES:
1. ORIFICE TO BE SHARP-EDGE MACHINED INTO THE STAINLESS STEEL PLATE WITH A ±0.5mm DIAMETER TOLERANCE.
2. ORIFICE PLATE TO BE 3mm THICK WHERE ORIFICE DIAMETER IS <150mm; OTHERWISE PLATE IS TO BE 5mm THICK.



NOTES:
1. FOLLOWING FIXTURE OF ORIFICE PLATE, BENCH PIT BASE WITH CONCRETE IN-FILL TO UNDERSIDE OF ORIFICE OUTLET.
2. TRASH SCREEN TO BE OF HOT-DIPPED GALVANISED MESH. WHERE ORIFICE DIA. <150mm, TRASH SCREEN OF MAXI-MESH RH3030; OTHERWISE WELDLOCK F40/203.

TYPICAL OSD WARNING SIGN DETAIL
SCALE: 1:10 @ A3

NOTES
1. SIGN SHALL BE PLACED IN A CLEAR AND VISIBLE LOCATION AT EACH DETENTION BASIN.
2. SIGN SHALL BE MADE FROM COLOUR BONDED ALUMINUM OR POLYPROPYLENE.
3. SIGN TO BE FIXED USING CHEMSET OR EPOXY.



TYPICAL O.S.D. MARKER PLATE DETAIL
SCALE: 1:10 @ A3

NOTES
1. TO BE ETCHED 0.9mm ALUMINUM PLATE.
2. SIGN TO BE PLACED IN A VISIBLE LOCATION NEAR DISCHARGE CONTROL PIT.
3. SIGN TO BE FIXED USING CHEMSET OR EPOXY.

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ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.

REV	DATE	DES.	DRN.	APP.	REVISION DETAILS
A-01	13/04/22	LS	LS	RS	ISSUE FOR REVIEW

BROADCREST
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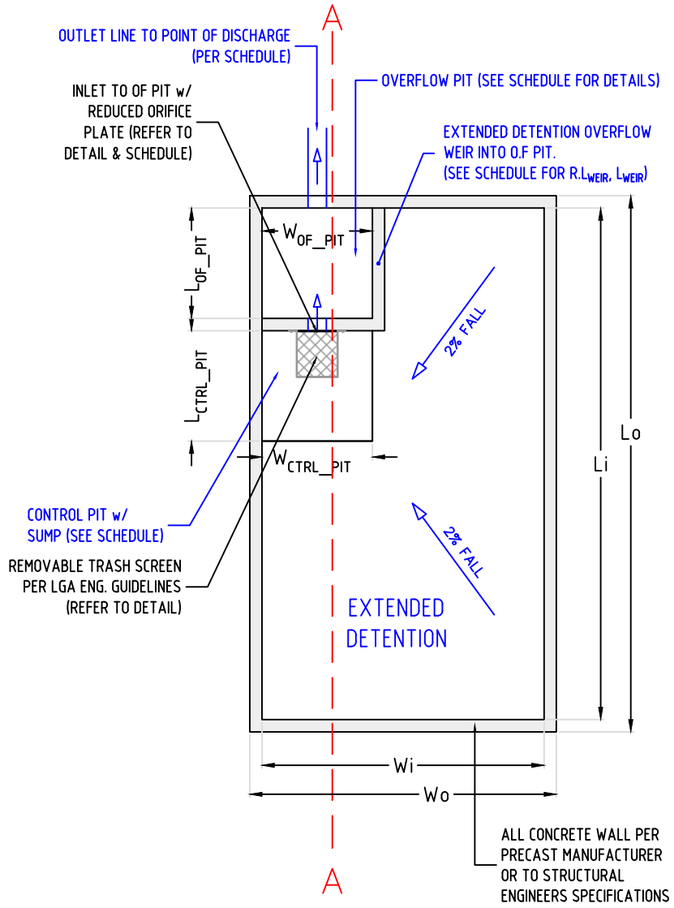
ENVIRONMENTAL FLOOD STORMWATER GEOTECHNICAL ACOUSTICS WASTEWATER
BROADCREST CONSULTING PTY LTD | ACN 622 508 187

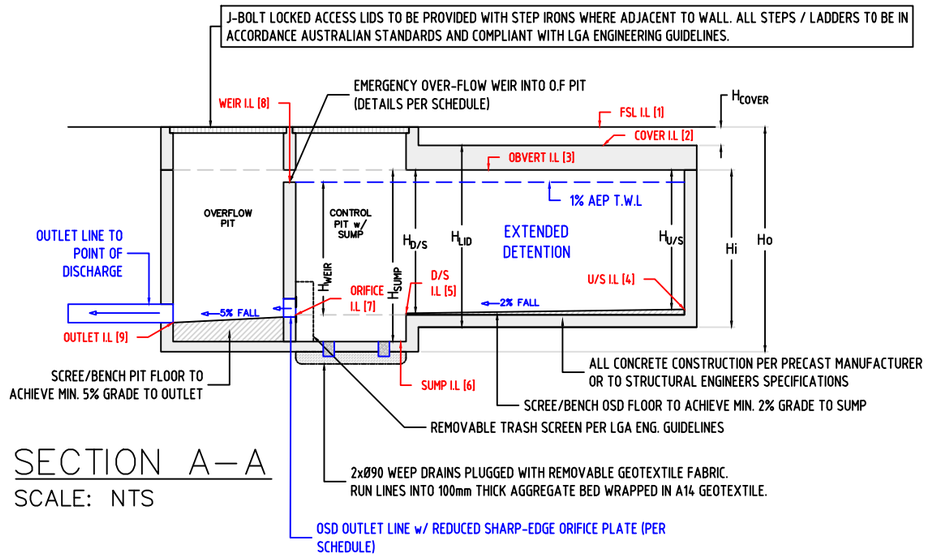
PROJECT DESCRIPTION: PROPOSED RESIDENTIAL ALTS & ADS	SHEET: OSD + RWT DETAILS
PROJECT SITE: 139 GEORGE ST, AVALON BEACH	PLAN: STORMWATER MANAGEMENT PLAN
LGA: NORTHERN BEACHES COUNCIL	CLIENT: BLUE SKY BUILDING DESIGN

PROJECT ID	1813-SW
SCALE	NTS @ A3 NTS @ A1
SHEET NO.	6 OF 7



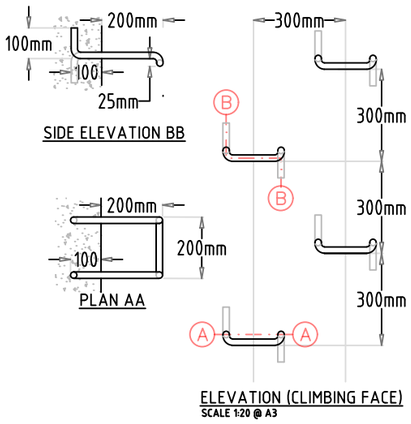
BELOW–GROUND ON–SITE DETENTION TANK (OSD)

SCALE: NTS



SECTION A–A

SCALE: NTS



STEP IRON TYPICAL DETAIL

1. STEP IRON FABRICATION FROM Ø21 M.S BARS.
2. STEP IRON BENDS TO BE FORMED AROUND Ø12 PIN.
3. STEP IRONS TO BE HOT-DIP GALVANISED.

ON–SITE DETENTION (OSD) TANK SCHEDULE

REF	SYSTEM ID		OSD1			
–	TYPE		'PANTHER' CONCRETE PRE–CAST BELOW–GROUND OSD			
–	OSD VOLUME (kL)		12.075			
–	TOTAL VOLUME (kL)		14.5			
–	TANK DIMENSIONS (m)	LENGTH:	Li:	3.8	Lo:	4.0
		WIDTH:	Wi:	2.8	Wo:	3.0
		HEIGHT:	Hi:	1.4	Ho:	1.9
[1]	SURFACE LEVEL S.L. (m, AHD)		11.500			
[2]	SURFACE COVERAGE	H$_{COVER}$ (m):	0.05			
		I.L$_{COVER}$ (m, AHD):	11.450			
[3]	OSD LID	H$_{LID}$ (m):	0.150			
		I.L$_{LID}$ (m, AHD):	11.300			
[4]	UPSTREAM STORAGE LEVELS (AT EX. WALLS)		H$_{U/S}$ (m):	1.344	I.L$_{U/S}$ (m, AHD):	9.956
[5]	DOWNSTREAM STORAGE LEVELS (AT SUMP)		H$_{D/S}$ (m):	1.382	I.L$_{D/S}$(m, AHD):	9.918
[6]	CONTROL PIT	DIMENSIONS (m):	L$_{CTR_PIT}$:	0.900	W$_{CTR_PIT}$:	0.900
		LID DETAIL:	CLASS–B GRATE w/ J–BOLTS			
		SUMP DETAIL:	H$_{SUMP}$ (m):	1.600	I.L$_{D/S}$(m, AHD):	9.700
[7]	ORIFICE CONTROL DETAILS	OSD OUTLET (mm):	Ø150			
		REDUCED ORIFICE (mm):	Ø (mm):	Ø40	I.L$_{ORIFICE}$ (m, AHD):	9.900
–	OSD PEAK CONTROLLED DISCHARGE (L/S):		4			
[8]	EMERGENCY OSD OVERFLOW WEIR		H$_{WEIR}$(m):	1.300	I.L$_{WEIR}$ (m, AHD):	11.200
			LWEIR (m):	1.800	D$_{OF}$ (m):	0.100
[9]	OVERFLOW PIT	DIMENSIONS (m):	L$_{OF_PIT}$:	0.900	W$_{OF_PIT}$:	0.900
		LID DETAIL:	CLASS–B GRATE w/ J–BOLTS (OR EQUIV.)			
		PIT OUTLET:	H$_{OF_PIT}$ (m):	1.445	I.L$_{OUT}$ (m, AHD):	9.855
			Ø (mm):	Ø150		

COMMENTS: IN–GROUND OSD w/ 12.0kL DETENTION STORAGE (9kL REQUIRED PER LGA SWMP2020). DISCHARGE CONTROL TO 1% AEP STORM EVENT.

ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.

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PROJECT SITE: 139 GEORGE ST, AVALON BEACH	PLAN: STORMWATER MANAGEMENT PLAN
LGA: NORTHERN BEACHES COUNCIL	CLIENT: BLUE SKY BUILDING DESIGN

PROJECT ID	1813-SW
SCALE	NTS @ A3 NTS @ A1
SHEET NO.	7 OF 7