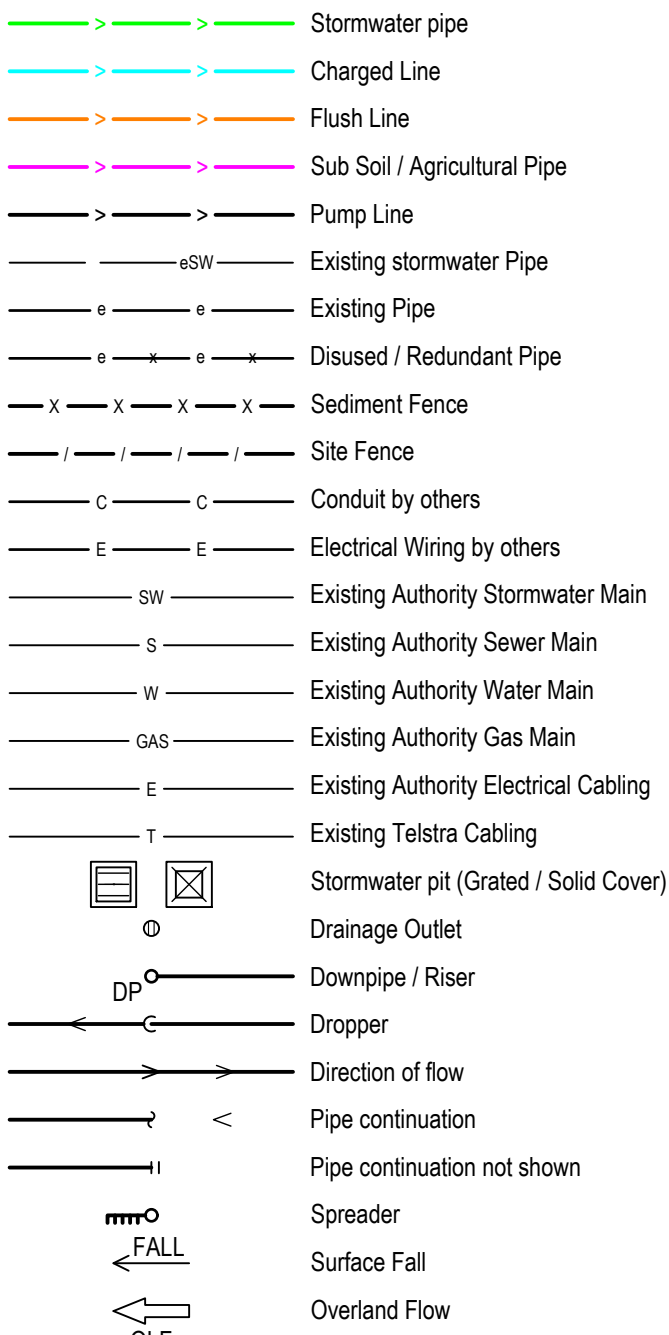


153A Ocean Street, Narrabeen

Stormwater Drainage

LEGEND:



ABBREVIATIONS:

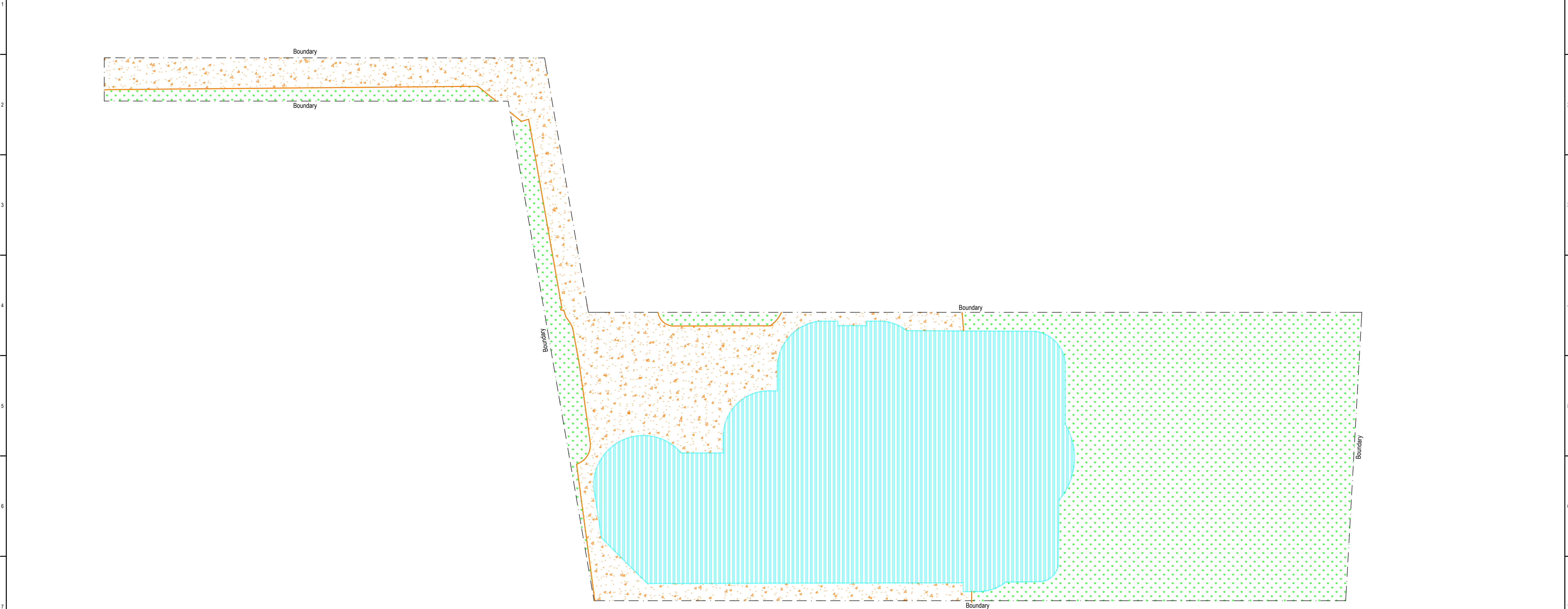
AG	Agricultural Line
AP	Aerial Pipe
BG	Box Gutter
BO	Balcony Outlet
CO	Clearout
CL	Charged Line
DP	Downpipe
EG	Eave Gutter
FW	Floor Waste
Galv.	Galvanised
GD	Grated Drain
HD	Heavy Duty
HP	High Point
IL	Invert Level
IO	Inspection Opening
L	Litres
LS	Level Spreader
L/s	Litres Per Second
L/s/m	Litres Per Second Per Metre
LD	Light Duty
m	Meters
m ²	Square Meters
m ³	Cubic Meters
mm/h	Millimetres per Hour
O/F	Overflow
OLF	Overland Flow
OSD	On Site Detention
PDO	Planter Drain Outlet
PL	Pump Line
PVC	Poly Vinyl Chloride
PVC-U	Poly Vinyl Chloride - Unplasticised
RH	Rainwater Head
RHS	Rectangular Hollow Section
RL	Reduced Level
RWT	Rainwater Tank
RWO	Rainwater Outlet
S	Sump
SW	Stormwater Pipe
TB	Thrust Block

GENERAL NOTES:

- All work is to be performed in accordance with AS3500.3 and council codes where applicable.
- The Plumber/ Drainer shall inspect the site and confirm the existing site structures, services and conditions prior to proceeding. If any discrepancies found, contact the engineer for further instructions.
- All underground pipes shall be P.V.C-U, laid at min. 1:100, unless noted otherwise.
- All connections to P.V.C. pipes are to be solvent welded to manufacturers specification
- All prefabricated pits, drains etc. are to be of heavy duty concrete construction unless noted other.
- Precise location of down pipes shall be nominated by others. Locations shown are for hydraulic design purposes only.
- Precise location of pits shall be nominated by others. Locations shown are for hydraulic design purposes only.
- All eaves gutters shall be of minimum cross sectional area of 7800mm² unless noted otherwise.
- This design covers the collection and disposal of rainwater from ROOF AREAS ONLY. Any paved areas not noted on the supplied architectural drawings are not included, unless shown.
- This design does not cover sub surface hydraulic flows.
- The installer is encouraged to use the 'Dial Before You Dig' service prior to excavation. No underground services have been noted or surveyed in this design. Dig at your own risk.
- IF IN DOUBT ASK. Consult the design engineer for any changes, omissions and discrepancies.
- System design has been produced to reflect reduced levels shown on architect supplied drawings.
- Pipe cover for uPVC pipes:
 - Single dwellings, no vehicular loading - 100mm
 - Single dwellings, vehicular loading without pavement - 450mm
 - Single dwellings, heavy vehicular loading on concrete - 100mm below underside of concrete
 - Single dwellings, no vehicular loading on un-reinforced concrete/pavers - 50mm below underside of concrete/pavers
 - Single dwellings, light vehicular loading on un-reinforced concrete/pavers - 75mm below underside of concrete/pavers
- Silt arrestor pit and rain guards must be regularly inspected and cleaned.
- Location of Stormwater Systems, including downpipes, pipes, pits and rainwater tank are indicative only. Exact locations shall be determined on site to suit site conditions.
- Sub-soil drains for retaining walls shall be installed by the builder and connected to Stormwater lines. All AG Lines shall be 100mm DIA, unless noted otherwise.
- Levels are approximate only. The plumber/drainer shall confirm the levels prior to proceeding. If any discrepancies found, contact the engineer for further instructions.
- Inspection and certification, if required, shall be done prior to backfilling, allow 48 hour notice for the engineer to carry out the inspection.
- Any damage to services during construction shall be repaired immediately at the plumber/drainers own expense.
- Areas & Geometry calculated are approximate and dependent on Surveyors & Architects drawings.
- It is essential that areas calculated are within plus/minus 5% range.
- Provide adequate access and overland flow routes out of property and not into adjoining properties
- Provide minimum 75mm clearance under all gates and operable external doors as to not impede overland flow
- Water entry and backflow into buildings should be prevented at all times
- All finished ground surfaces should fall away from structures
- Charged lines are to be flushed regularly and flush/arrestor pits are to be regularly inspected and cleaned
- All pipes entering a water tank shall have a first flush device installed. First flush device is to be sized as per document "BASIX Interim Rainwater Harvesting Systems Guidelines".
- All water tanks will be insect proofed by others
- If tanked water is being reused for drinking or sanitary purposes, appropriate disinfecting by others should be considered.
- Schedule of calculations is based on plan areas
- Plumber to provide 'leaf guard' or similar over all gutter, rainheads & sumps
- Atlantis Blockade or similar recommended to be installed in all underground pipes to prevent blockages forming in the pipes during the construction phases



LOCALITY PLAN
Not to scale



Scale 1:100

	Roof:	=	267.60
	Impervious:	=	147.60
	Pervious:	=	274.13
	Total:	=	689.33

		Rev.	Date	Amendment Description	By	App.
01		01	31/01/2025	Minor amendments	SM	BM
02		02	23/05/2025	Amended as per revised architectural	SM	BM
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Email: admin@harrisonmorris.com.au

ARCHITECT:	McNally Architects
CLIENT:	Cameron & Candice Kirby

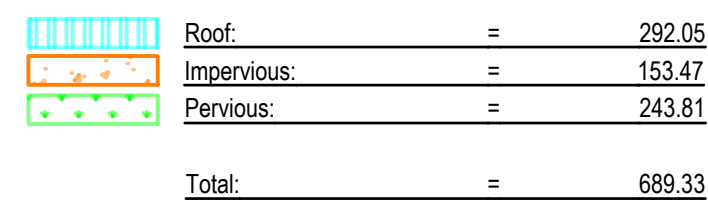
Address:

153A Ocean Street
Narrabeen NSW 2101

Job Description:

Proposed Additions & Alterations
To Residence

Stormwater Engineering Title:			
Existing Site Coverage			
Original Sheet Size: A1	Scale: 1:100, 1:20, 1:5	Drawn: NL	Design: SM
Date: January 2025	Job No: 2425-143	Sheet No: 02 of 06	Rev: 02



DRAFT



ENGINEERS
AUSTRALIA



H&M
Consultancy

ARCHITECT:

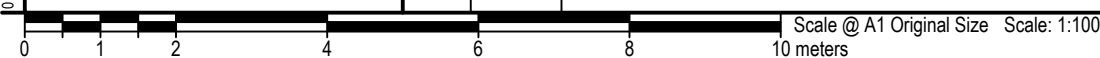
CLIENT

Address:

Job Description:

Stormwater Engineering Title:

Original Sheet Size: A1	Scale: 1:100, 1:20, 1:5	Drawn: NL	Design: SM
Date: January 2025	Job No. 2425-143	Sheet No. 03 of 06	Rev: 02





Box Gutter/Sump with Side Overflow Detail

Downspout

Sump

Minimum length of sump

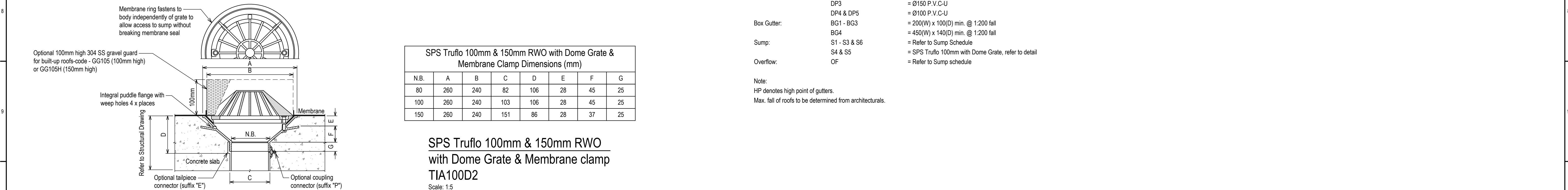
Code	w _{og}	d _{og}	h _t	l _t	w _{oc}	d _{oc}	l _{oc}	0.7l _{oc}
Description	Width of Box Gutter (mm)	Depth of Box Gutter (mm)	Sump Depth (mm)	Sump Length (mm)	Overflow Width (mm)	Overflow Depth (mm)	Horizontal distance between side of overflow channel above sole of box gutter (mm)	Bottom edge of overflow channel above sole of box gutter (mm)
DP1/S1	200	110	60	400	200	75	100	70
DP2/S2	200	110	60	400	200	75	100	70
DP3/S3	450	140	145	540	450	90	145	32
DP12/S6	200	110	60	400	200	75	100	70

Note:

1. All units are in millimetres
2. All values are the minimum required
3. The width of the sump is equal to the width of box gutter
4. Sump and overflow channel shall be fully sealed to the box gutter
5. Minimum depth of box gutter, $d_b = l_{oc} + (d_{oc} \times 30)$ min.

Specification codes: TIA100D2 (C1 body, aluminum dome grate & membrane ring) TIB100D2 (C1 body, bronze dome grate & membrane ring) TBA100D2 (all-bronze assembly) - for 80mm outlet, use "100/80" instead of "100" - for 150mm outlet, use "150" instead of "100"	Suggested application: Roof decks	<u>Roof Drainage Plan</u>
---	---	----------------------------------

Specification codes: TIA100D2 (C1 body, aluminum dome grate & membrane ring)	<u>Suggested application:</u> Roof decks
--	--



Optional 100mm high 304 SS gravel guard for built-up roofs-code - GG105 (100mm high) or GG105H (150mm high)

Integral puddle flange with weep holes 4 x places

100mm

Membrane

SPS Truflo 100mm & 150mm RWO with Dome Grate & Membrane Clamp Dimensions (mm)

N.B.	A	B	C	D	E	F	G
80	260	240	82	106	28	45	25
100	260	240	103	106	28	45	25
150	260	240	151	86	28	37	25

Overflow: S4 & S5 OF = SPS Truflo 100mm with Dome Grate, refer to detail = Refer to Sump schedule

Note:
HP denotes high point of gutters.
Max. fall of roofs to be determined from architecturals.

Refer to Structural
Concrete slab
Optional tailpiece
Optional coupling

SPS Truflo 100mm & 150mm RWO
with Dome Grate & Membrane clamp
TIA100D2

connector (suffix "E") connector (suffix "P") Scale: 1:5

Roof Drainage Plan

Scale 1:100

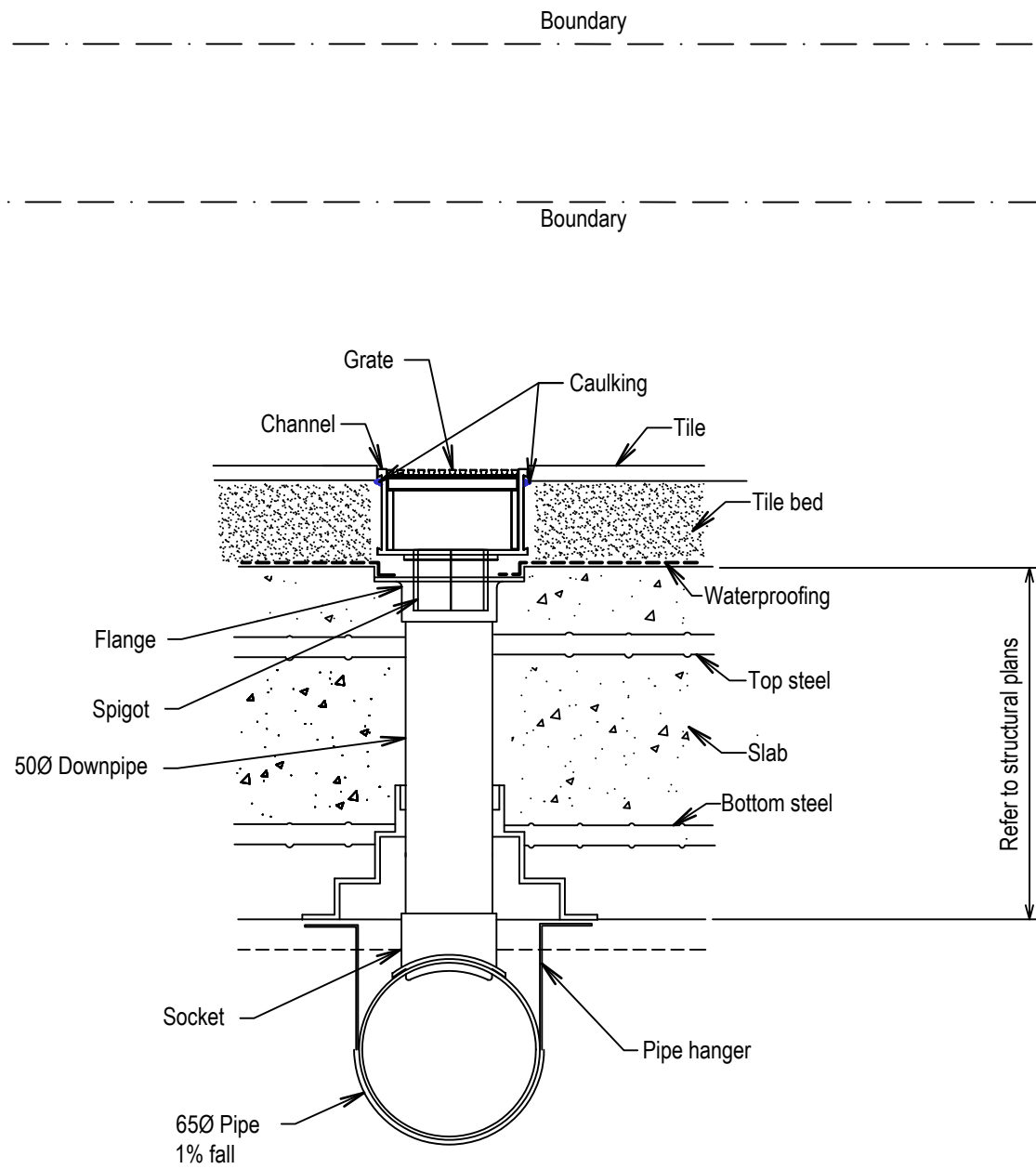
Membrane ring fastens to body independently of grate to allow access to sump without breaking membrane seal

Optional 100mm high 304 SS gravel guard for built-up roofs-code - GG105 (100mm high)

SPS Truflow 100mm & 150mm RWO with Dome Grate & Membrane Clamp Dimensions (mm)

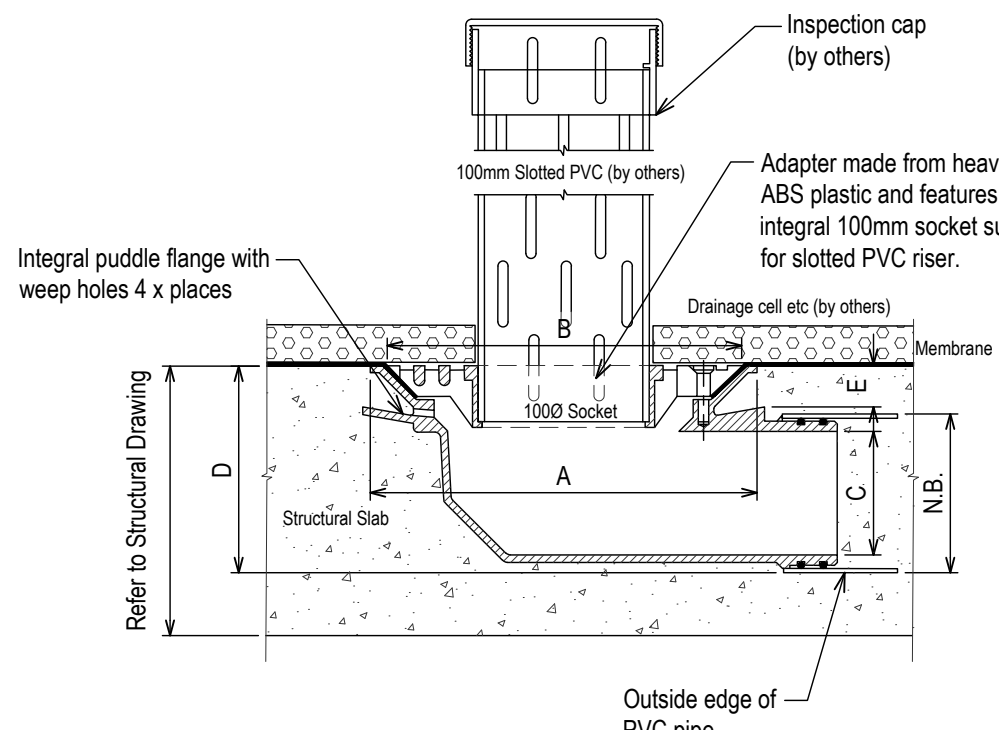
Downpipes:	DP1, DP2 & DP12	= Ø90 P.V.C-U
DP3	= Ø150 P.V.C-U	
DP4 & DP5	= Ø100 P.V.C-U	
Box Gutter:	BG1 - BG3	= 200(W) x 100(D) min. @ 1:200 fall
	BG4	= 450(W) x 140(D) min. @ 1:200 fall
Sump:	S1 - S3 & S6	= Refer to Sump Schedule
	S4 & S5	= SPS Truflow 100mm with Dome Grate, refer to detail
Overflow:	OF	= Refer to Sump schedule

 Integral puddle flange with weep holes & v places 60mm	<table border="1"> <thead> <tr> <th>N.B.</th><th>A</th><th>B</th><th>C</th><th>D</th><th>E</th><th>F</th><th>G</th></tr> </thead> <tbody> <tr> <td>80</td><td>260</td><td>240</td><td>82</td><td>106</td><td>28</td><td>45</td><td>25</td></tr> <tr> <td>100</td><td>260</td><td>240</td><td>103</td><td>106</td><td>28</td><td>45</td><td>25</td></tr> </tbody> </table>	N.B.	A	B	C	D	E	F	G	80	260	240	82	106	28	45	25	100	260	240	103	106	28	45	25	Note: HP denotes high point of gutters. Max. fall of roofs to be determined from architecturals.
N.B.	A	B	C	D	E	F	G																			
80	260	240	82	106	28	45	25																			
100	260	240	103	106	28	45	25																			



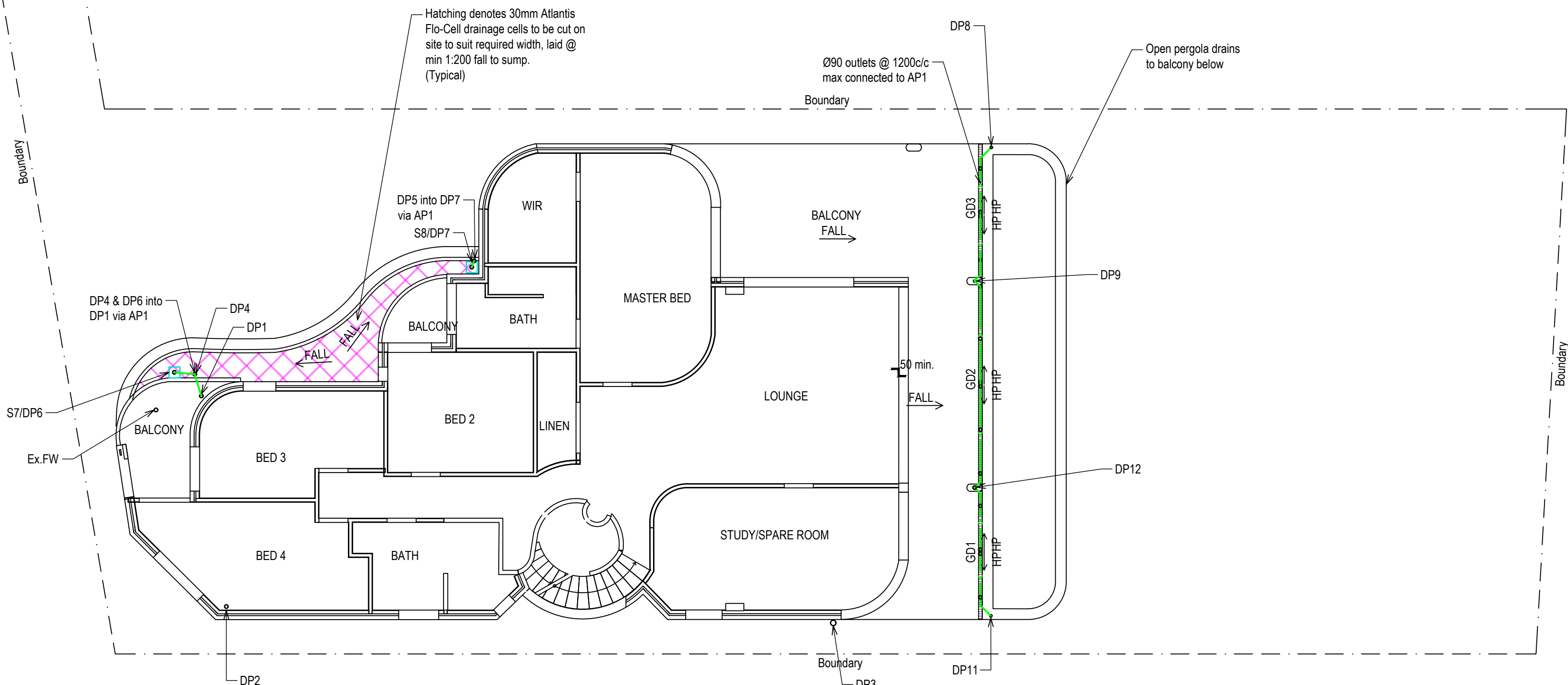
GRATED DRAIN "Stormtech 65AG" MANUFACTURER'S DETAIL
REFERENCE ONLY - NOT TO SCALE
NOT FOR CONSTRUCTION

Specification codes:
TIA100/90PB (100mm CI body with planter box adapter)



SPS Trufllo 100mm x 90° with All-purpose Planter Box Adapter Dimensions (mm)						
N.B.	A	B	C	D	E	G
100	260	240	83	140	28	25

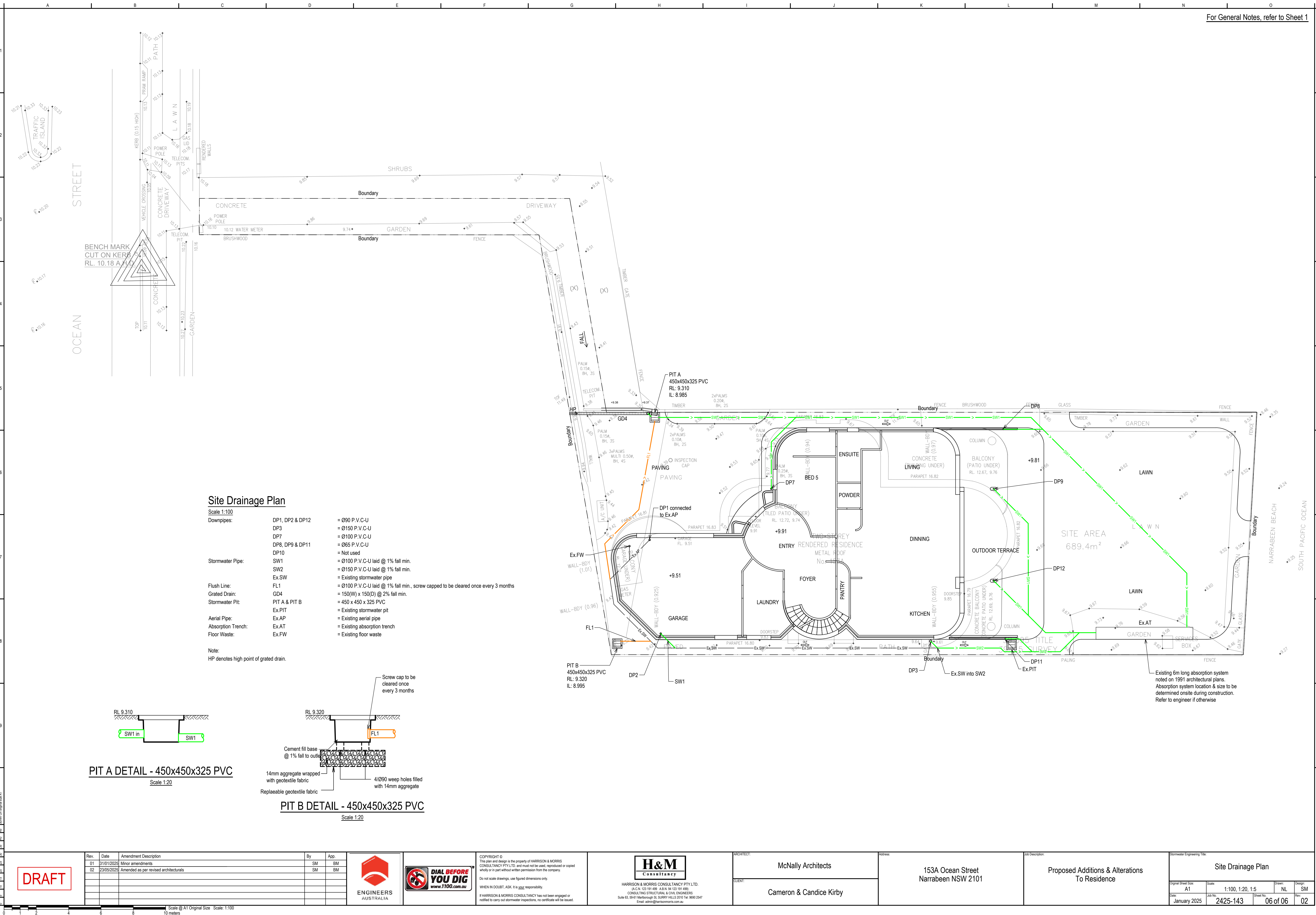
DP4 & DP5 Detail
SPS Trufllo 100mm x 90° RWO with
All-purpose Planter Box Adapter
TIA100/90PB
Scale: 1:5



Balcony Drainage Plan
Scale 1:100

- Downpipes: DP1, DP2 & DP12 = Ø90 P.V.C-U
DP3 = Ø150 P.V.C-U
DP4 - DP7 = Ø100 P.V.C-U
DP8, DP9 & DP11 = Ø65 P.V.C-U
DP10 = Not used
Sump: S7 & S8 = SPS Trufllo 100mm x 90° RWO with All-purpose Planter Box Adapter TIA100/90PB
Grated Drain: GD1 - GD3 = 100 x 30 Stormtech or similar
Floor Waste: Ex.FW = Existing floor waste
Aerial Pipe: AP1 = Ø65 P.V.C-U laid @ 1% fall min.

Note:
HP denotes high point of grated drains.
Max. fall of roofs to be determined from architectural.



Site Drainage Plan

Scale 1:100

Downpipes:

DP1, DP2 & DP12
DP3
DP7
DP8, DP9 & DP11
DP10

= Ø90 P.V.C-U
= Ø150 P.V.C-U
= Ø100 P.V.C-U
= Ø65 P.V.C-U
= Not used
= Ø100 P.V.C-U laid @ 1% fall min.
= Ø150 P.V.C-U laid @ 1% fall min.
= Existing stormwater pipe
= Ø100 P.V.C-U laid @ 1% fall min., screw capped to be cleared once every 3 months

Stormwater Pipe:

SW1
SW2
Ex.SW
FL1
GD4
PIT A & PIT B
Ex.PIT

= Existing stormwater pipe
= Existing stormwater pit
= Existing absorption trench
= Existing floor waste

Note:

HP denotes high point of grated drain.

PIT A DETAIL - 450x450x325 PVC

Scale 1:20

PIT B DETAIL - 450x450x325 PVC

Scale 1:20

DRAFT

Rev.	Date	Amendment Description
01	31/01/2023	Minor amendments
02	23/05/2023	Amended as per revised architectural

By	App.
SM	BM
SM	BM



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CONSULTING STRUCTURAL & CIVIL ENGINEERS
Suite 63, 5941 Macdonough St, BURRY HILLS 2157 Tel: 8000 2547
Email: admin@harrismorris.com.au

ARCHITECT:

McNally Architects

CLIENT:

Cameron & Candice Kirby

Address:

153A Ocean Street
Narrabeen NSW 2101

Job Description:

Proposed Additions & Alterations
To Residence

Stormwater Engineering Title:

Site Drainage Plan

Original Sheet Size:	Scale:	Drawn:	Design:
A1	1:100, 1:20, 1:5	NL	SM
Date:	Job No:	Sheet No:	Rev:
January 2025	2425-143	06 of 06	02