DO NOT SCALE FROM DRAWINGS - USE ONLY FIGURED DIMENSIONS

GENERAL
- G1 These drawings shall be read in conjunction with the architectural and other consultants' drawings / specifications and with other such written instructions as may be issued during the construction. Any discrepancy shall be referred to the Engineer before commencing the work.
- G2 All dimensions are in millimeters, UNO (unless noted otherwise).
- G3 These drawings shall not be scaled, refer to dimensions given only or refer to the Architectural drawings.
- G4 All levels and setting out dimensions shown on the drawings shall be checked on site prior to the commencement of the work.
- G5 During construction the structure shall be maintained in a stable condition with no part being overstressed.
- G6 Existing services, where shown, have been drawn based on supplied information and as such their accuracy can not be guaranteed. It is the responsibility of the contractor to determine their exact location prior to the commencement of work.
- G7 All service trenches under vehicular pavements shall be back filled in accordance with the respective authorities requirements.
- G8 All trench backfill material shall be compacted to the same density as the surround material.
- G9 All site disturbed areas shall be reinstate to the original condition, including kerbs, footpaths, concrete areas, gravel and grassed areas, etc.
- G10 It is the contractor responsibility to obtain all authority approvals.

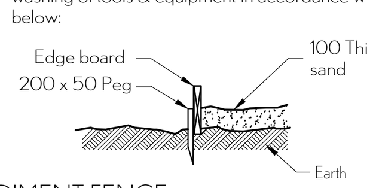
STORMWATER DRAINAGE
- S1 The stormwater drainage design has been carried out in accordance with AS / NZS 3500.3 "Stormwater Drainage" & AS / NZS 3500.2.3 "Stormwater Drainage - Acceptable Solutions".
- S2 Any variations to the design levels shall be referred to the engineer immediately for approval.
- S3 Any variations to specified products or details shall be referred to the engineer for approval prior to their installation.
- S4 Subsoil drainage shall be provided to all retaining walls & embankments. They shall be a minimum of Ø100 slotted pipe in filter sock surrounded by crushed rock. They shall drain to the stormwater drainage system.

SEDIMENT & EROSION CONTROL NOTES
- E1 The sediment & erosion controls shall be maintained effectively for the duration of the project. They shall not be removed until the site has been stabilized or landscaped to the principal certifying authorities satisfaction.
- E2 A single all weather access way shall be provided at the front of the property consisting of 50-80 mm aggregate or similar material with a minimum thickness of 150 mm laid over needle-punched geotextile fabric (Bidim A14 or similar) and installed prior to any works being commenced on site.
- E3 Where the building works are greater than a single dwelling development, a shaker pad must be installed as part of the vehicular accessway. The shaker pad shall be:
  - Established on suitable prepared & compacted material.
  - Constructed such that it is flush with the adjoining surfaces.
  - A minimum of 5000 mm in length and breadth.
  - Designed with rungs spaced 200-250 mm apart & with a maximum width of 75 mm each.
- E4 The contractor shall ensure that no spoil or fill encroaches upon adjacent areas during the project.
- E5 The contractor shall ensure that all kerb inlets and drains affected by stormwater flow from the site are protected at all times during the project. Kerb inlet sediment traps shall be installed along the immediate vicinity along the street frontage. These shall be regularly maintained during the project.
- E6 The street / road shall be kept clean from dirt and debris from vehicles departing the site.
- E7 Sediment fencing shall be secured to posts (please note that if star pickets or similar are used then plastic safety caps shall be installed on top of the posts) at 2000 mm intervals with the geotextile fabric embedded a minimum of 200 mm in to the soil.
- E8 All the topsoil stripped from the site shall be stockpiled such that it does not interfere with drainage lines and stormwater inlet pits. The stockpile shall be suitably covered with an impervious membrane and screened by sediment fencing.

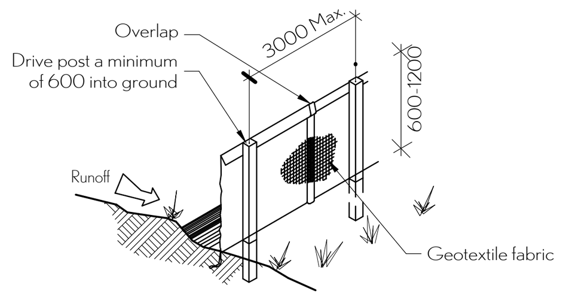
SOIL CONSERVATION NOTE:
- C1 Prior to the commencement of the site works the following shall be provided to capture water borne sediments:
  - Sediment fencing
  - Sediment trap
  - Washout area
- C2 These shall be maintained regularly during the course of the construction with the sediment trap cleaned after each storm event.

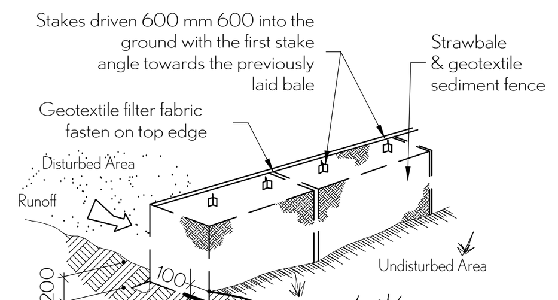
SEDIMENT TRAP
- T1 A 1000 x 1000 mm square by 500 mm deep pit located at the lows point of the site.

WASHOUT AREA
- W1 The washout are shall be 1800 x 1800 mm allocated for the washing of tools & equipment in accordance with the detail below:



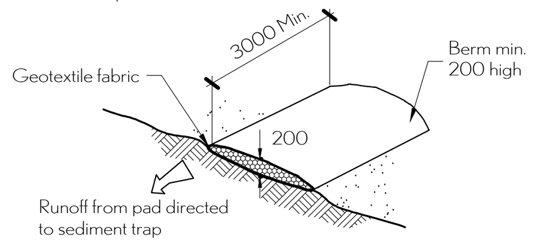
SEDIMENT FENCE
- F1 Provide sediment fence on down slope boundary as shown on plan.
- F2 Geotextile fabric to be buried 200 mm below ground at the lower edge.



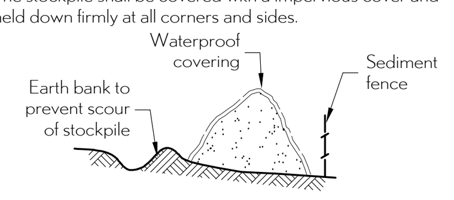


- F3 Drainage area is 0.5 HA with a maximum slope gradient 1:2 maximum and a maximum slope length of 50 m.

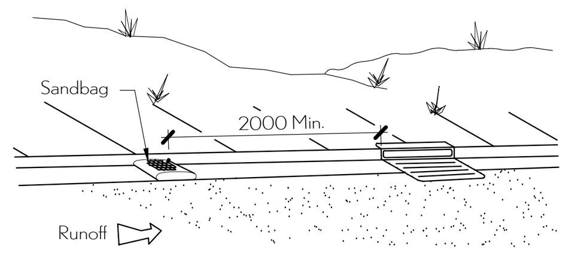
VEHICLE ACCESS TO SITE
- V1 Vehicle access to the building site shall be restricted to a single point so as to reduce the amount of soil deposited on the street pavement.



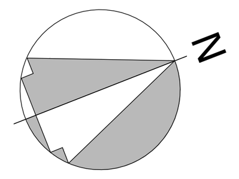
BUILDING MATERIAL STOCKPILES
- M1 Where there are stockpiles of material on site they shall be located at least 2000 mm away from any hazard including surfaces with grades greater than 15%, away from zones of concentrated stormwater flows, away from driveways, temporary vehicular accessways, footpaths, nature strips, kerbs, open swales & the drip zone of trees.
- M2 Sediment fencing shall be installed downslope of all stockpiles.
- M3 The stockpile shall be covered with a impervious cover and held down firmly at all corners and sides.

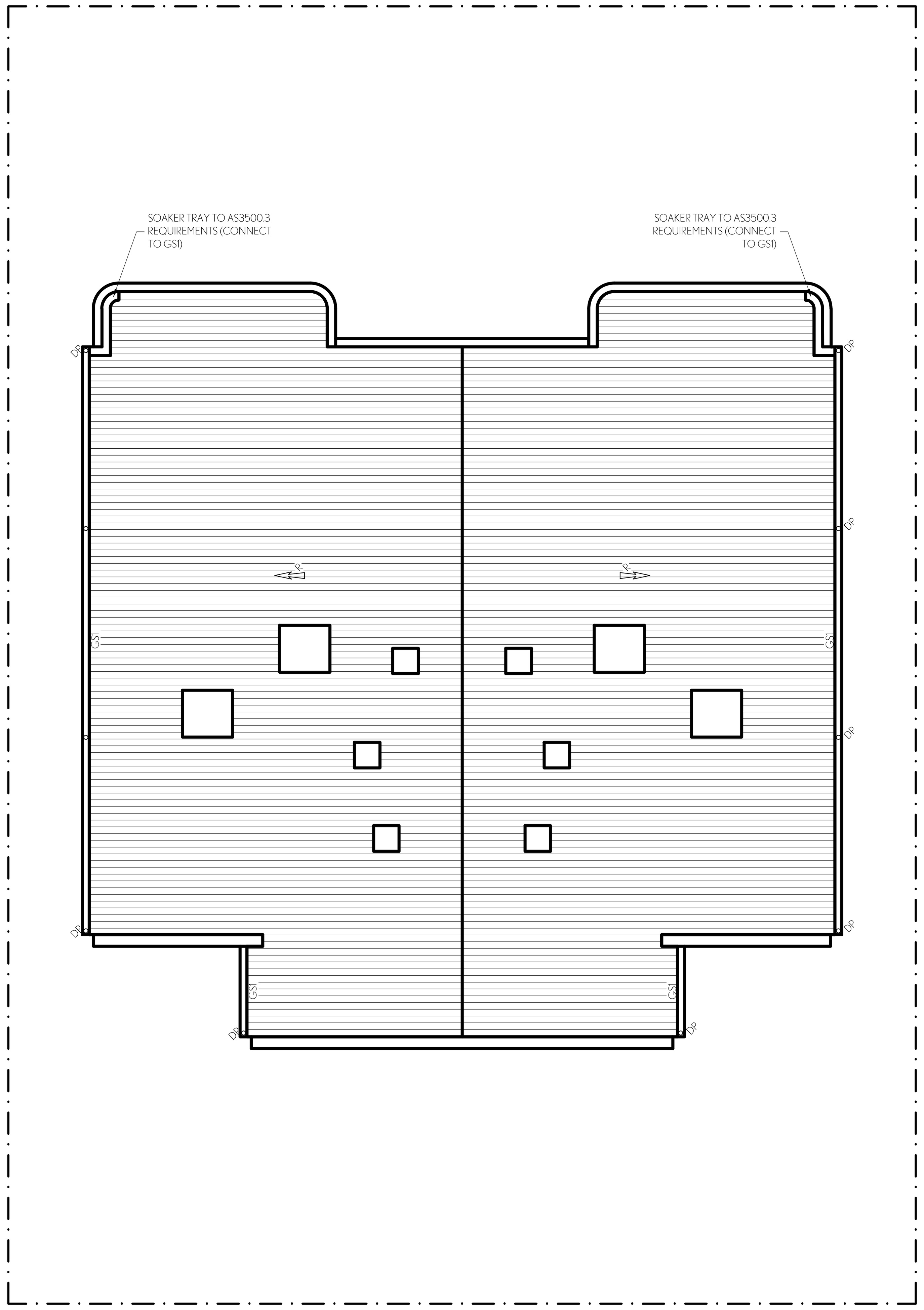


SANDBAG KERB SEDIMENT TRAP
- K1 In certain circumstances extra sediment trapping maybe needed in the street gutter.



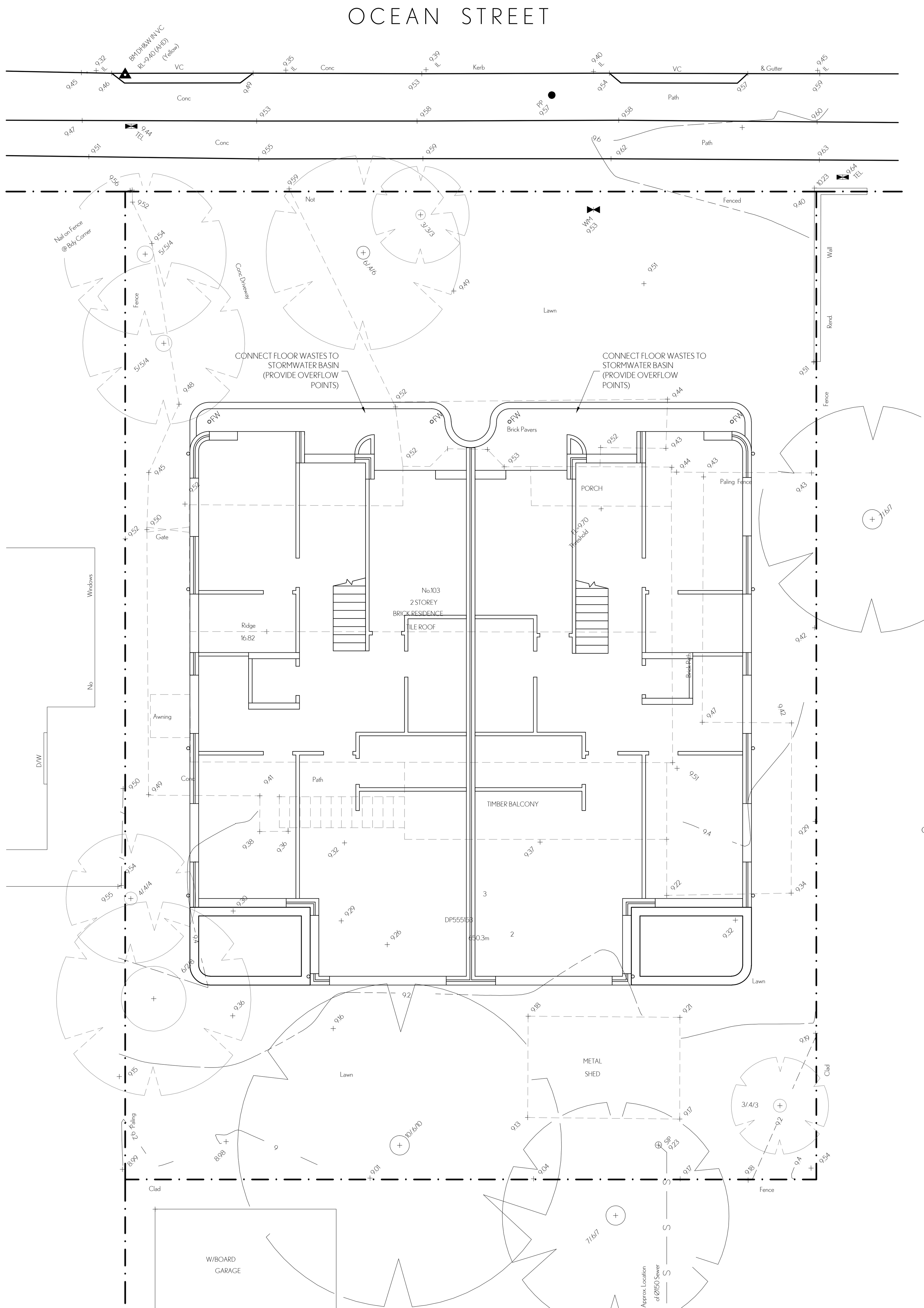
A1 ORIGINAL SIZE





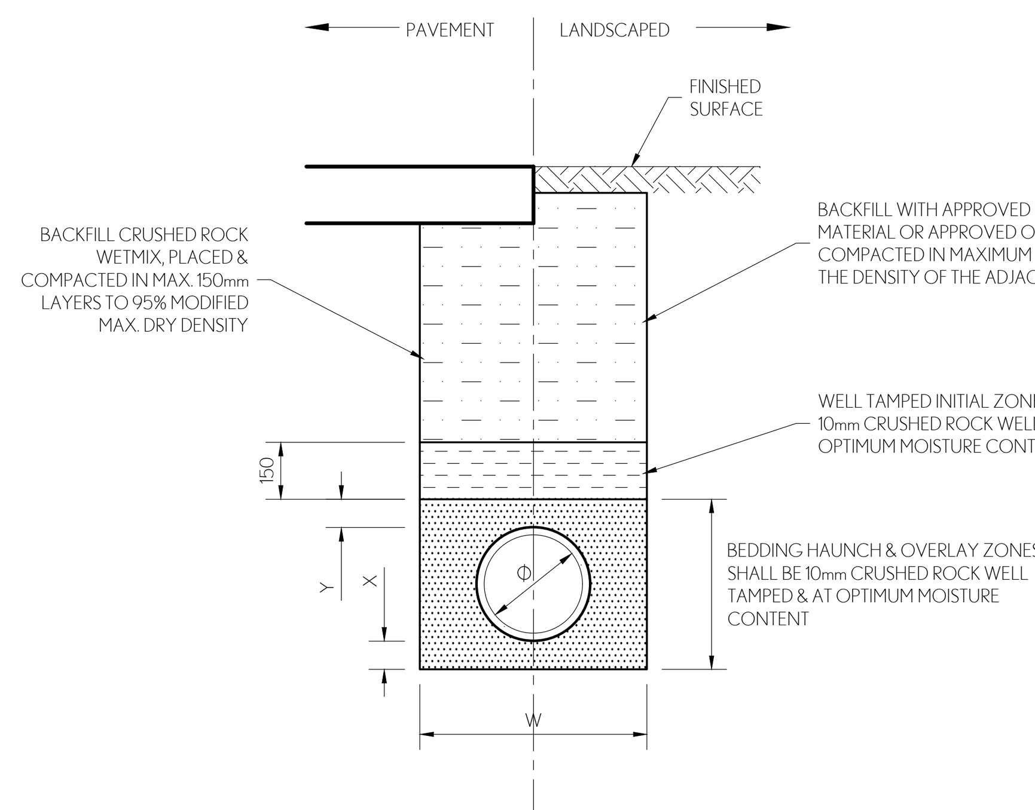
CONCEPT ROOF DRAINAGE PLAN 1:100

- All drainage lines shall be UPVC (Class SH) Stormwater Drainage Pipe, UNO.
- All drainage lines shall be laid @ 1% min fall, UNO.
- DP = Down Pipe



CONCEPT FIRST FLOOR DRAINAGE PLAN 1:100

- All drainage lines shall be UPVC (Class SH) Stormwater Drainage Pipe, UNO.
- All drainage lines shall be laid @ 1% min fall, UNO.
- DP = Down Pipe
- FW = Ø150 Floor Waste



NOTE:
1. REFER TO PIPE LAYING SPECIFICATIONS FOR DETAILS

PIPE DIA Ø	W	X MIN.	Y
100-150	300	75	75
225-300	600	75	75

UPVC DRAINAGE PIPE

TYPICAL PIPE LAYING DETAILS 1:20

FOR DA APPROVAL ONLY

DOWNPIPE & GUTTER SCHEDULE		
MARK	GUTTER SIZE	DP
GS1	Stramit M/S Pattern Eaves Gutter	Ø100

DRAINAGE DESIGN CALCULATIONS:
Council: NORTHERN BEACHES

Site area = 650.3 m² (0.06503 ha)
Pre-developed impervious area = 284.6 m² = 43.8 %
Post-developed impervious area = 408.6 m² = 62.8 %

PSD = 15.0 L/s (TOTAL)
SSR = 19.2 m³ (TOTAL)

REV	APP.	AMENDMENT DESCRIPTION	DATE
0	CJE	FOR APPROVAL ONLY	25.02.25

PROPOSED DEVELOPMENT
103 OCEAN STREET
NARRABEEN NSW 2102

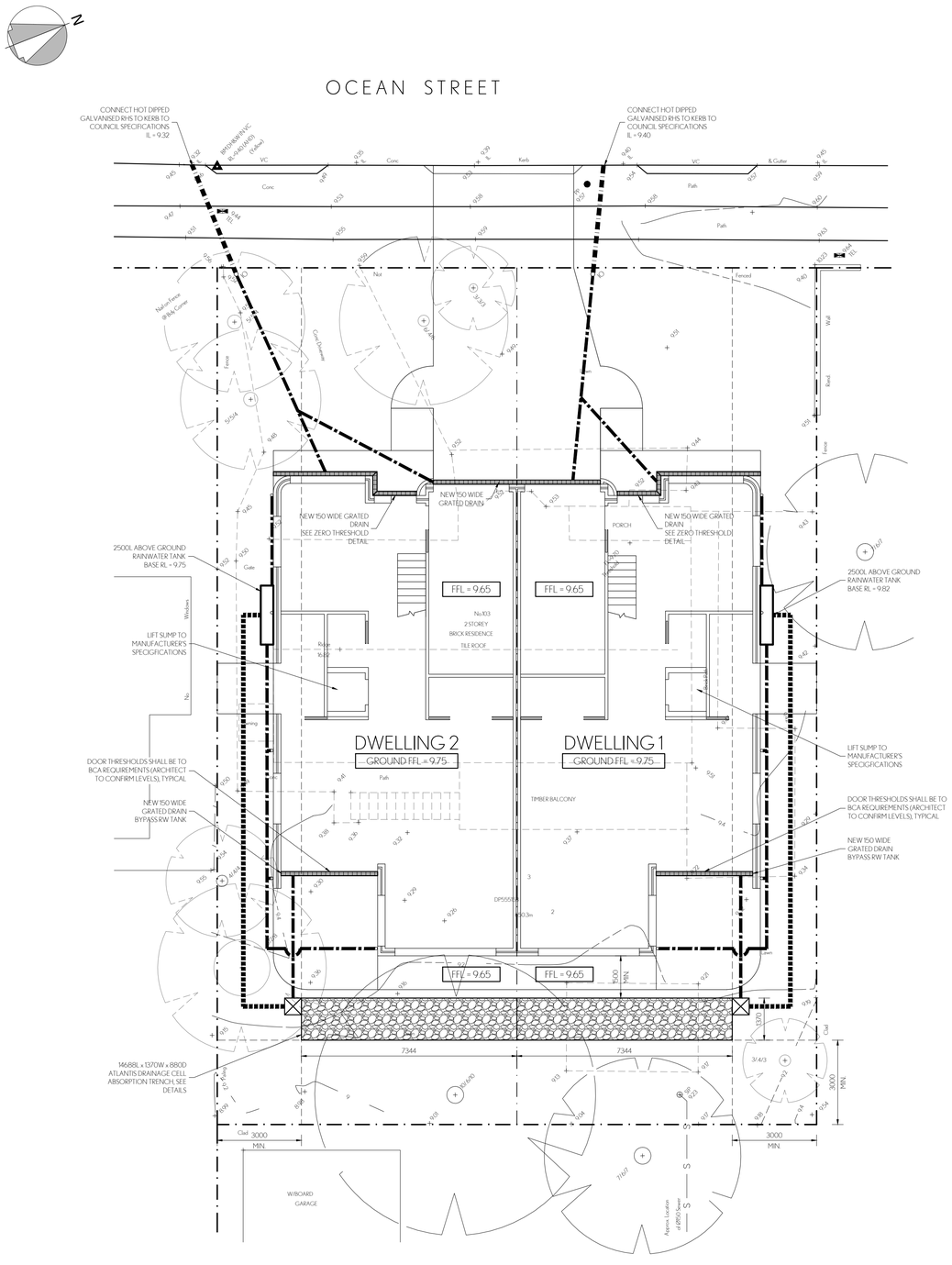
CLIENT

CONCEPT ROOF & FIRST FLOOR DRAINAGE PLAN

SCALE:	DATE:	DESIGN:	REV:
1:100	25 FEB 2025	CJE	0
JOB: 25032	DRW: SW1	SIGNED:	

engineered by...
E2
PO Box 608
WAVERLEY NSW 2024
02 8594 6111
info@E2design.com.au

DO NOT SCALE FROM DRAWINGS - USE ONLY FIGURED DIMENSIONS



CONCEPT GROUND FLOOR DRAINAGE PLAN 1:100

- All drainage lines shall be UPVC (Class SH) Stormwater Drainage Pipe, UNO.
- All drainage lines shall be laid @ 1% min fall, UNO.
- IO = Inspection Opening

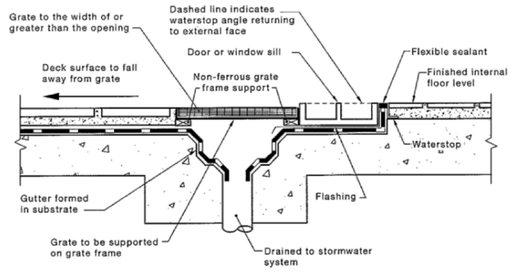


FIGURE 2.9 TYPICAL DETAILS OF MEMBRANE TERMINATION AT WALL OPENINGS WHERE THE INTERNAL AND EXTERNAL FINISHED FLOOR LEVELS DO NOT ALLOW FOR AN UPTURN

ZERO THRESHOLD DETAIL (AS4654.2)

DRAWING KEY:

- Ø100 UPVC Stormwater Drainage Line
- Ø150 UPVC Stormwater Drainage Line
- 150x100x4.0 RHS Stormwater Drainage Line

DRAINAGE LINE NOTE:

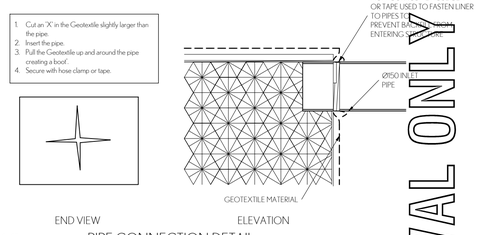
All underground pipes and pits shall not disturb tree roots.
All sub-soil drainage shall be installed to BCA requirements and connected to the drainage system.
Drainage line location is indicative and shown for clarity. Exact location subject to change to engineer's approval.
Existing drainage infrastructure shall be clean & in proper working order.
All levels shall be verified by builder on-site prior to commencing.
All charged drainage lines shall be solvent jointed UPVC pipes.

RAINWATER RE-USE:

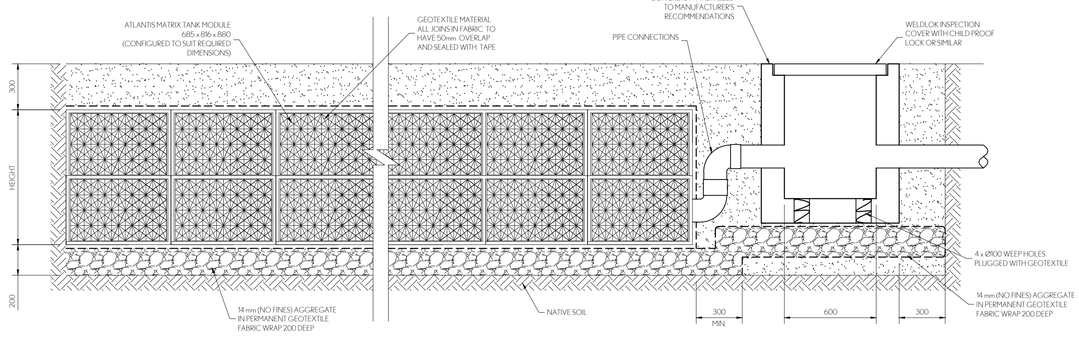
1. All inlets to rainwater tank to be fitted with first flush device.
2. Gutter guard to be installed on all eaves gutters.
3. Pressure pump/tap to be provided for re-use of captured tank water.
4. A permanent sign to be located in the vicinity of the tank stating the tank is not potable for use.
5. All rainwater services shall be clearly labelled 'Non Potable Water' with appropriate hazard identification.
6. Pipework used for rainwater services shall be coloured purple in accordance with AS1344.
7. All valves and apertures shall be clearly and permanently labelled with safety signs to comply with AS1319.
8. An air gap or a RPZD to be installed to ensure backflow prevention.
9. Rainwater tank, reticulation system and mains top arrangement to be installed in accordance with AS/NZS3500.1.2-2003 and the NSW Code of Practice: Plumbing and Draining.
10. Rainwater tanks shall be plumbed to BASIX requirements.

THRESHOLD NOTE:

All new slabs shall have compliant set downs at all thresholds.
Threshold design is the responsibility of the architect and builder to comply with the requirements of the NCC (previously BCA) section 3.1.3.
Engineered by E2 takes no responsibility for structures built without a compliant threshold set down.



PIPE CONNECTION DETAIL



TYPICAL STORMWATER ABSORPTION TRENCH DETAIL 1:20

COUNCIL: NORTHERN BEACHES
Absorption Trench 1

Inflow/Outflow Data			**Absorption Trench Dimensions**			**Pit Dimensions**		
Impervious Area to trench	**310.50**	m²	Dimensons			No. of Pits	**2**	
C	**1.00**		Length	**14.688**	m	Length	**0.6**	m
ARI	**100.00**	years	Width	**1.37**	m	Width	**0.6**	m
			Thickness	**0.88**	m	Depth	**0.4**	m
Assumed Absorption Rate	**0.45**	l/m²/s	Trench Volume	**1205.6**	l/m			
Calc. Absorption Rate (50% Clogging)	**0.225**	l/m²/s						
HED Discharge	**0.00**	l/s						

Storm (min)	Intensity (mm/hr)	Outflow Adsorption (Litres)	Inflow Rate (l/s)	Storm Inflow Volume (l)	Calculated Storage (l)	Available Storage (l)	Suitability
5	246.0	1358.3	21.2	6370.3	5012.1	17995.9	OK
6	231.0	1629.9	19.9	7178.3	5548.4	17995.9	OK
7	220.0	1901.6	19.0	7975.9	6074.3	17995.9	OK
8	209.6	2173.2	18.1	8684.4	6511.1	17995.9	OK
9	200.5	2444.9	17.3	9345.8	6900.9	17995.9	OK
10	193.0	2716.5	16.7	9995.7	7279.2	17995.9	OK
12	179.0	3259.9	15.5	11124.8	7864.9	17995.9	OK
15	171.0	4074.8	14.8	13284.5	9209.7	17995.9	OK
20	149.0	5433.1	12.9	15433.8	10000.7	17995.9	OK
25	129.2	6791.4	11.2	16728.6	9937.3	17995.9	OK
30	124.0	8149.6	10.7	19266.4	11116.8	17995.9	OK
40	107.0	10866.2	9.2	22166.7	11300.5	17995.9	OK
45	96.0	12224.5	8.3	22373.9	10149.4	17995.9	OK
50	95.8	13582.7	8.3	24808.1	11225.4	17995.9	OK
55	86.3	14941.0	7.4	24582.8	9641.8	17995.9	OK
60	86.1	16299.3	7.4	26755.4	10456.2	17995.9	OK

FOR DA APPROVAL

REV	APP.	AMENDMENT DESCRIPTION	DATE
0	CJE	FOR APPROVAL ONLY	25.02.25

PROPOSED DEVELOPMENT
103 OCEAN STREET
NARRABEEN NSW 2102

CLIENT

CONCEPT GROUND FLOOR DRAINAGE PLAN

SCALE:	DATE:	DESIGN:	REV:
1:100, 1:20	25 FEB 2025	CJE	0
JOB: 25032	DRW: SW2	SIGNED:	

engineered by...
E2
PO Box 608
WAVERLEY NSW 2024
02 8594 6111
info@E2design.com.au

AT ORIGINAL SIZE