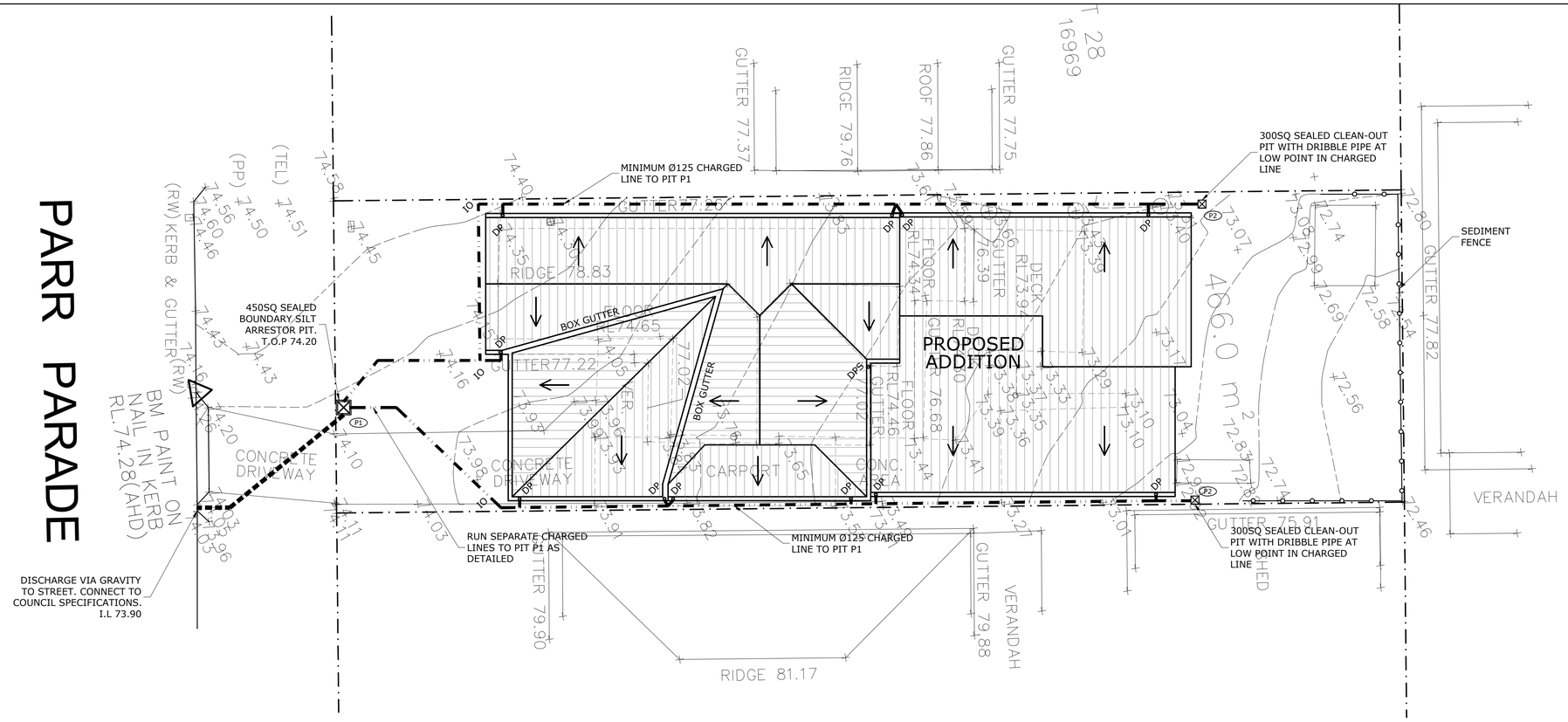
DO NOT SCALE FROM DRAWINGS - USE ONLY FIGURED DIMENSIONS

PARR PARADE



CONCEPT 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 = New Ø90 UPVC Down Pipe
- DPS = New Ø90 UPVC Down Pipe Spreader
- IO = Inspection Opening

DRAWING KEY:

- Ø125 UPVC Solvent Sealed Charged Drainage Line
- 150 x 100 x 4.0 RHS Gravity Stormwater Drainage Line
- Sediment Fence Location

DRAINAGE DESIGN CALCULATIONS:

Council: Warringah - Northern Beaches

Site area = 466.0 m² (0.0466 ha)
Pre-developed impervious area = 237.0 m²
Post-developed impervious area = 277.0 m²
Increase in impervious = 40.0 m² < 50.0 m²

Existing single dwelling where development is limited to a one-off alteration and addition resulting in a net increase in impervious area of less than 50.0m². Therefore OSD is not required.

No existing easement for stormwater drainage is present on the site and the installation of an easement through the rear property has been refused.

Exposed rock is present on the site and as such infiltration or absorption is not feasible.

Due to the low lying site it is necessary to partially charge the downpipes to the boundary pit P1 prior to the site being discharged from the boundary to the street via gravity as required. All charged lines shall be solvent sealed UPVC to gutter level throughout.

DRAINAGE LINE NOTE:

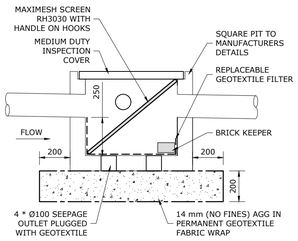
All underground pipes and pits shall not disturb tree roots.
All sub-soil drainage shall be installed to BCA requirements and connected to the drainage system.
Drainage line location is indicative and shown for clarity. Exact location subject to change to engineer's approval.
Existing drainage infrastructure 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.

DOWNPIPE & GUTTER SCHEDULE		
MARK	GUTTER SIZE	DP
GS1	Stramit M/S Pattern Eaves Gutter	Ø90

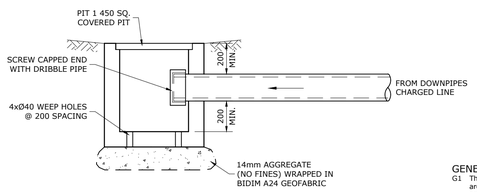
NOTE: All Gutter Systems shall be GS1, UNO.

STORMWATER PIT SCHEDULE				
PIT	PIT DIMENSIONS	PIPE I.L.		TOP PIT
		IN	OUT	R.L.
P1	450 SQ. Sealed Silt Pit	-	-	74.20
P2	300 SQ. Clean-out Pit	-	-	-

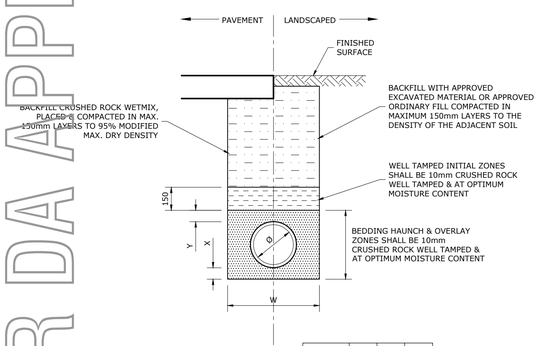
All pits greater than 1200 mm deep shall have step irons.
Maximum pit depths: 450 x 450 - 600 mm max. 600 x 600 - 900 mm max.
600 x 900 - 1200 mm max. 900 x 900 - greater than 1200 mm



SILT ARRESTOR PIT 'P1' DETAIL 1:20



DETAIL - CLEAN OUT PIT P2 1:20



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

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

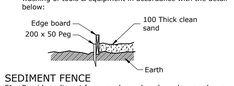
C2 These shall be maintained regularly during the course of the construction with the sediment trap cleaned after each storm event.

SEDIMENT TRAP

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

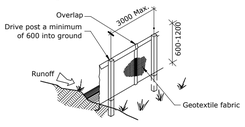
WASHOUT AREA

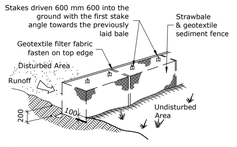
W1 The washout are shall be 1800 x 1800 mm allocated for the washing of tools & equipment in accordance with the detail below:



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.

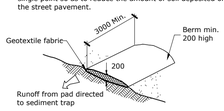




F3 Drainage area is 0.5 HA with a maximum slope gradient 1:2 maximum and a maximum slope length of 50 m.

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.

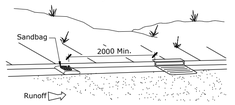


BUILDING MATERIAL STOCKPILES

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.



REV	APP.	AMENDMENT DESCRIPTION	DATE

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ACN 145 358 265

E2 CIVIL AND STRUCTURAL DESIGN PTY LTD

PROPOSED ADDITIONS

18 PARR PARARDE
NARRWEENA NSW

WADE

Concept Drainage Plan

SCALE:	DATE:	DESIGN:	REV:
1:100, 1:20	23 Jan 2020	CB	0
JOB:	DRW:	SIGNED:	
20.022	SW1		

FOR DA APPROVAL ONLY

A1 ORIGINAL SIZE