

As per Northern Beaches Councils (ie former Manly Council) Specification for Stormwater Management 2003 and Specification for On Site Stormwater Management 2003, 9000L OSD storage tank system is required (independently derived using DRAINS software). As per Councils Planning and Strategy Committee - 13 September 2004 REPORT: Corporate Planning and Strategy Division Report No. 46 this OSD volume maybe offset by retention / storage and recycling of collected waters as proposed for this development. All new drainage including gutters, dps, pipes etc are to be sized and installed to AS3500.3 requirements by a licensed plumber. The existing piped system maybe utilized although must be exposed, reviewed and ensured as operating satisfactorily by a licensed plumber during construction, with all cracked/broken/unsealed components being repaired and / or replaced.



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PROJECT:
 PROPOSED
 STUDIO & GARAGE
 23 KANGAROO ST
 MANLY
 for ~ J. BARR

DRAWING :
 STORMWATER
 MANAGEMENT
 PLAN

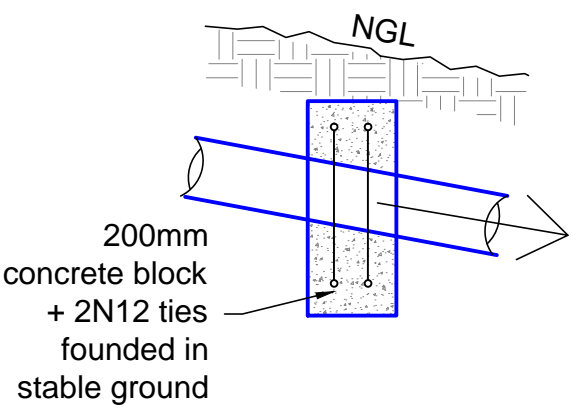
Job No :
 190307

Drawing No :
 SW1

Document Certification
 Barrenjoey Consulting Engineers pty ltd
 per
 Lucas Molloy MIEA CPEng NER Director

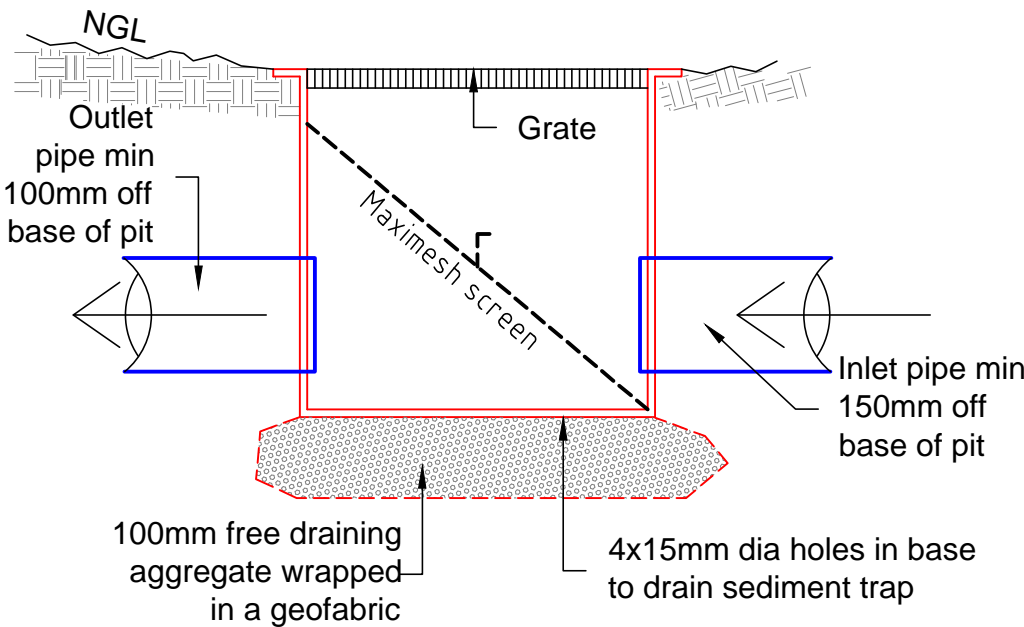
STORMWATER NOTES

1. All roof collection components (ie gutters / DPs etc) are to be located / sized by the Developments Contracting Plumber for a 5% AEP event capacity. For example a 70x100 gutter draining to a 100dia or 75x70 dp has a capacity to drain 32.5m² of roof area.
2. All Trunk Drainage pipes as shown on this plan to be minimum of 90mm dia uno.
3. All pipes to be uPVC to AS 1254:2002.
4. All pipes to be laid at the grade required to match pit invert levels.
5. All pipes to be installed and laid in accordance with AS 3500.3:2003.
6. All roof guttering/ down pipes / valley gutters / box gutters etc are to be sized and installed in accordance with AS 3500.3:2003.
7. All pits are to be proprietary uv resistant polypropylene or similar unless noted (approved by the Engineer)and are to include a min 50mm sediment trap in the base and a maximesh screen laid at 45' across the pit to protect the outlet pipe .
8. All pits greater than 600mm in depth are to be proprietary precast concrete (approved by the Engineer).
9. All pits greater than 1000mm in depth are to have adequate access requirements in accordance with OH&S/Workcover requirements (ie; minimum dimensions 900x900mm with step irons).
10. All works are to be inspected and certified by the Principle Certifying Authority prior to backfilling.
11. All works requiring certification by the Engineer will require a works as executed survey prepared by a registered Surveyor detailing all levels etc as on the Engineering plans.
12. The system is too be flushed and cleaned of all sediment and debris annually.
13. The system will require regular cleaning and maintenance to ensure its ability to function is maintained.
14. To ensure the system's ability to function is maintained it is to be inspected and certified as operating effectively by a licensed plumber every 5 years, and a engineer every 20yrs.
15. All existing predevelopment catchment area run-off conditions exiting the site are to be maintained with no run-off flows being diverted from the predevelopment condition.



ANCHOR BLOCK DETAIL

to be installed at 6m cts
if pipe slope > 1v to 5h



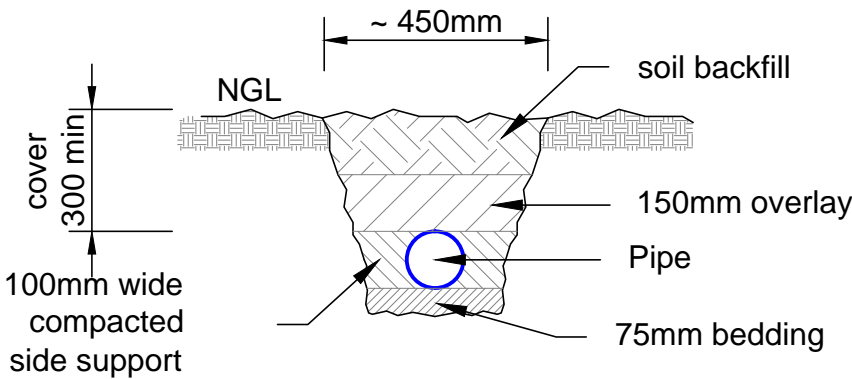
TYPICAL PIT DETAIL

NTS

Pit to be Pre Fabricated Polypropylene
pit such as Everhard 450 series

STORMWATER FLOW SUMMARY (DRAINS ANALYSIS)

Development area	- 379m ²
(as per Councils Planning and Strategy Committee - 13 September 2004 Corporate Planning and Strategy Division Report No. 46)	
Existing impervious area	- 265 m ²
Proposed impervious area	- 379 m ²
Detention Volume modeled	- 9000l
PSD modeled	- 17 l/s (1.8m ht tank)
Existing Site Discharge	
5yr ARI Storm	- 17 l/s
100yr ARI Storm	- 28 l/s
Post Development Site Discharge	
5yr ARI Storm	- 12 l/s
100yr ARI Storm	- 17 l/s



TYPICAL uPVC PIPE & TRENCH DETAIL

~ 1 : 20

Bedding / overlay to be -
a) sand, free from rock, hard or sharp objects
b) max 14mm crushed rock or gravel
c) the excavated material free of rock, hard or sharp objects and broken up with no soil lumps > 75mm dia

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