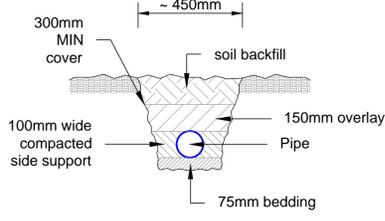


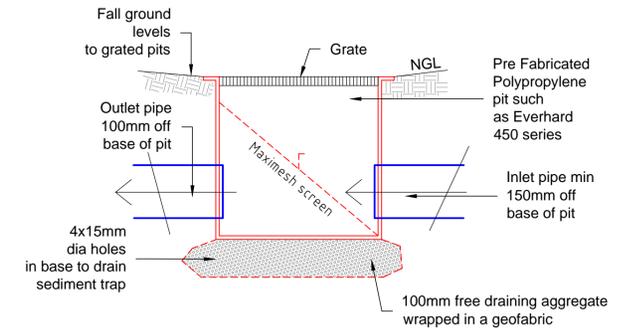
STORMWATER MANAGEMENT PLAN

Refer to plans by ACTION PLANS for details of the proposed new residence.
 All roof guttering / down pipes / valley gutters / box gutters etc are to be sized and installed in accordance with NCC / BCA and AS 3500.3:2003 by a licensed plumber.
 dp location indicative and to be confirmed during construction.
 BASIX modeling and detailing by others.
 OSD system as per Northern Beaches Council Pittwater 21 DCP Section B5 Water Management.



STORMWATER NOTES

- All roof collection components (ie gutters / DPs etc) are to be located / sized by the Developments Contracting Plumber for a 5% AEP event capacity. (30m2 roof area per 90mm dp via Quad low front gutter).
- Trunk lines shown on plan to be 90mm dia uPVC uno.
- All pipes to be uPVC to AS 1254:2002.
- All pipes to be laid at the grade required to match pit invert levels.
- All pipes to be installed and laid in accordance with AS 3500.3:2003.
- All roof guttering / down pipes / valley gutters / box gutters etc are to be sized and installed in accordance with AS 3500.3:2003.
- 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.
- All pits greater than 600mm in depth are to be proprietary precast concrete (approved by the Engineer).
- 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).
- All works are to be inspected and certified by the Principle Certifying Authority prior to backfilling.
- 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.
- The system is to be flushed and cleaned of all sediment and debris annually.
- The system will require regular cleaning and maintenance to ensure its ability to function is maintained.
- 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 an engineer every 20yrs.
- 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.
- Flows from upstream properties entering the site are to be monitored during construction and diverted about the OSD system / residence etc as required.

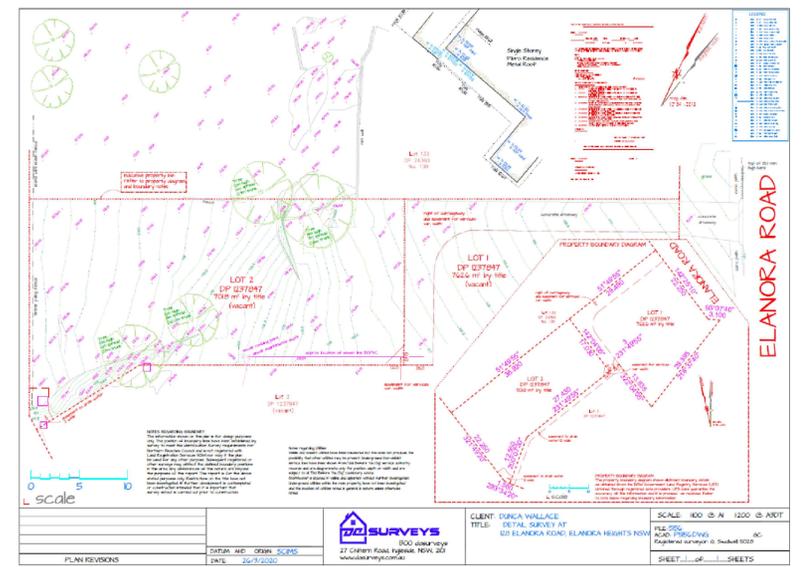
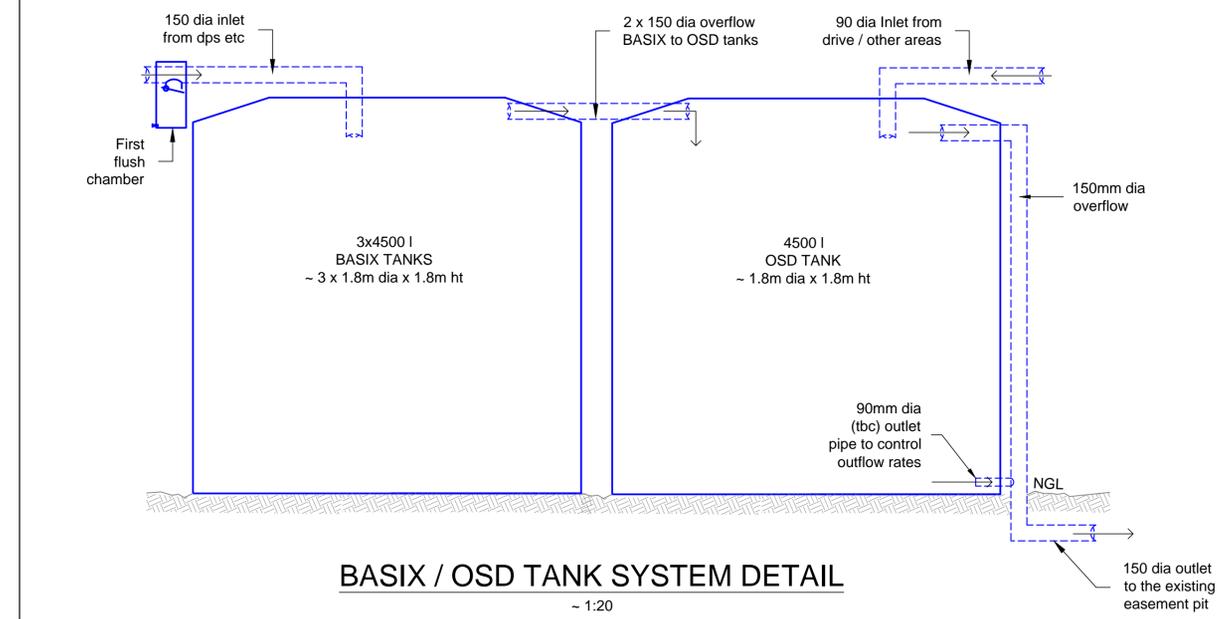


Note -
 Bedding / overlay to be -
 a) sand, free from rock, hard or sharp objects
 b) max 14mm crushed rock or gravel
 c) the excavated material free of rock, hard or sharp objects and broken up with no soil lumps > 75mm dia

ONSITE DETENTION REPORT (DRAINS ANALYSIS)

Site area	- 701.8 m2
Existing impervious area	- 0 m2
Proposed impervious area	- 445 m2
Area modeled to OSD	- 400 m2
Detention Volume modeled	- 4500l
Existing Site Discharge	
5yr ARI Storm	- 28 l/s
100yr ARI Storm	- 44 l/s
Post Development Site Discharge	
5yr ARI Storm	- 28 l/s TOTAL (15 l/s via OSD, 13 l/s uncontrolled)
100yr ARI Storm	- 44 l/s TOTAL (22 l/s via OSD, 22 l/s uncontrolled)

BASIX / OSD TANK SYSTEM DETAIL



EXISTING SITE SURVEY

NTS

ISSUE: PreLim 01. 09. 2020 Issued for comment DA 03. 09. 2020 Issued for DA submission DA - A 02. 11. 2020 DRAINS model and OSD vol amended	Barrenjoey Consulting Engineers Pty Ltd Stormwater Structural Civil PO Box 672 Avalon NSW 21107 M 0418 620 330 E lucasbee@bigpond.com ABN: 13124694917 ACN: 124694917	PROJECT: PROPOSED NEW RESIDENCE 128A ELANORA RD ELANORA HEIGHTS for ~ D. WALLACE & D. De LIMA COSTA	DRAWING : STORMWATER MANAGEMENT PLAN	Job No : 200807	Drawing No SW1 _{DA-A}
				Document Certification Barrenjoey Consulting Engineers Pty Ltd per Lucas Molloy MBEA CPEng NER Director	