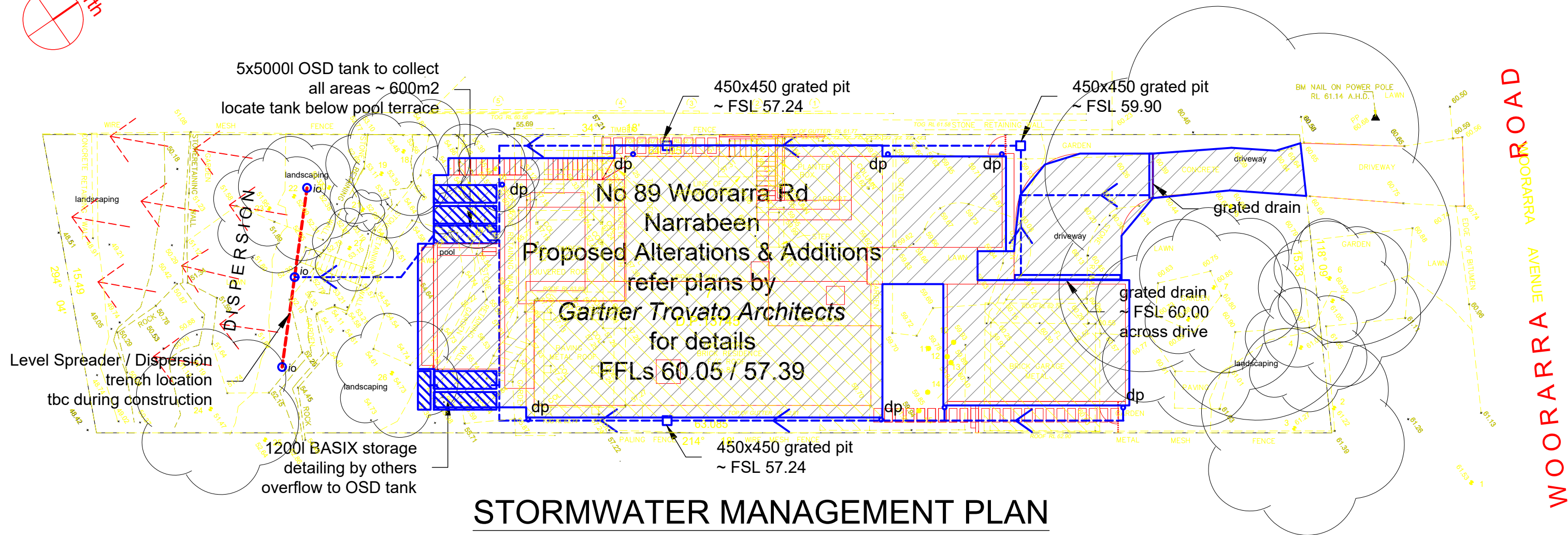
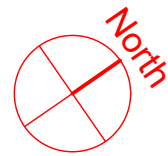
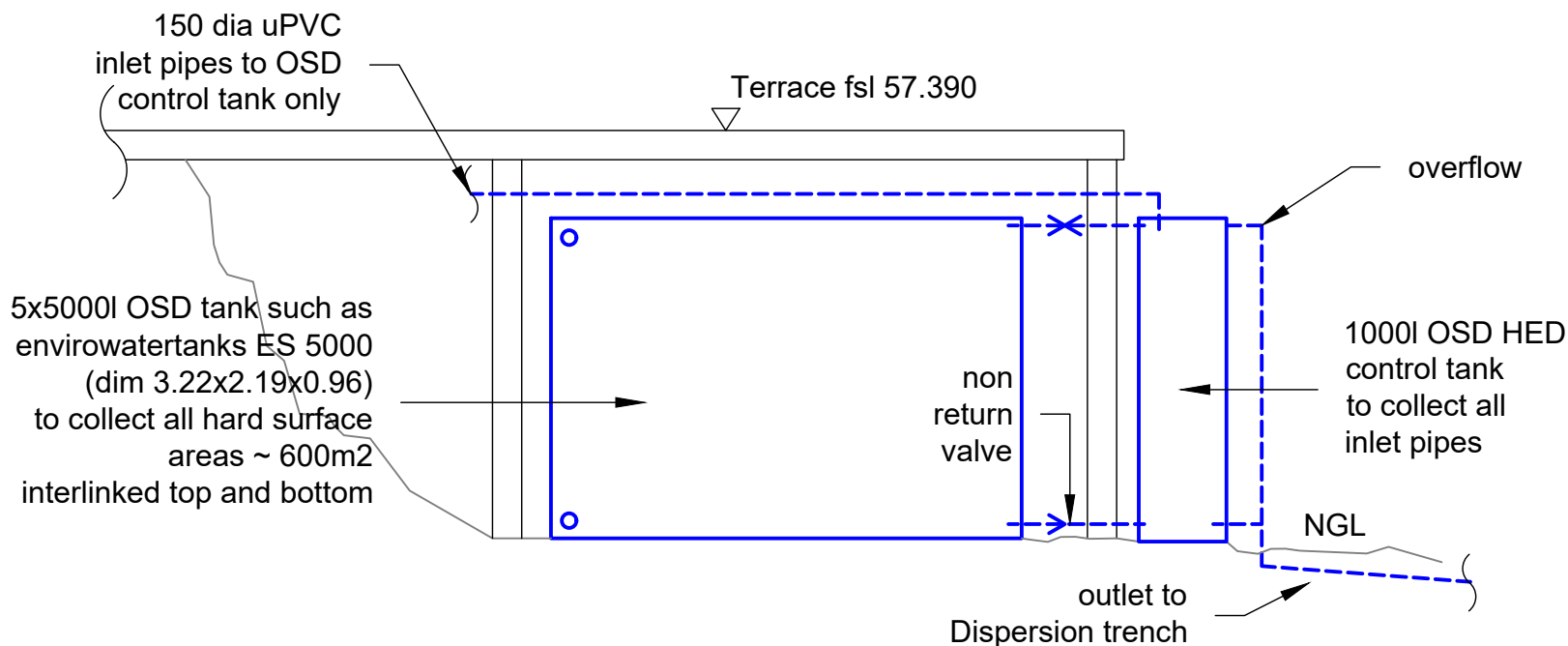




STORMWATER MANAGEMENT PLAN

~ 1:200

ALL HARD SURFACE RUNOFF (~ 600m2) IS TO BE COLLECTED AND DIRECTED TO THE OSD HED CONTROL TANK. A SEPARATE SYSTEM COLLECTING ROOF RUNOFF IS TO BE DIRECTED TO THE BASIXs RECYCLING TANK WITH OVERFLOWS TO THE OSD TANK. THE 25000l OSD IS DESIGNED TO RESTRICT POST DEVELOPMENT PEAK FLOW RATES AS PER NORTHERN BEACHES COUNCIL WATER MANAGEMENT FOR DEVELOPMENT POLICY SECTION 5.5 STORMWATER DISPOSAL FROM LOW LEVEL PROPERTIES (AND SECTION 5.5.1.2.5 STAGE 3 LEVEL SPREADER) BY RESTRICTING POST DEVELOPMENT 1% AEP FLOWS TO 'GREENFIELDS' 5% AEP EVENT RUNOFF (~ 50% REDUCTION FROM ACTUAL PREDEVELOPMENT CONDITIONS). FINAL TANK DIMENSION, OUTLET HEIGHT / DIAMETER TBC WITH ENGINEER PRIOR TO INSTALLATION. FLOWS ARE TO DISCHARGE TO A DISPERSION TRENCH LAID ALONG THE NATURAL CONTOURS OF THE SITE AND LOCATED TO MIMIC PRE DEVELOPMENT FLOW CONDITIONS AND IN ACCORDANCE WITH THE GEOTECHNICAL CONSULTANTS REQUIREMENTS, NOTING THERE IS TO BE NO CONCENTRATION OF FLOWS. TRUNK DRAINAGE SYSTEM SHOWN ABOVE TO INCLUDE 150 DIA uPVC PIPES.



INDICATIVE OSD TANK LAYOUT

~ 1:50

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.
- Trunk lines shown on plan to be 150mm dia uPVC.
- 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 a 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.

ONSITE DETENTION REPORT

(DRAINS ANALYSIS)

Site area	- 969 m2
Existing impervious area	- 200 m2
	note 0m2 modeled
Proposed impervious area	- 500m2
Area modeled to OSD	- 600 m2
Detention Volume modeled	- 25000l (note 1000l HED)
Existing Site Discharge	
5yr ARI Storm	- 25 l/s
100yr ARI Storm	- 53 l/s
Post Development Site Discharge	
5yr ARI Storm	- 14 l/s TOTAL
	(5 l/s via OSD, 9l/s uncontrolled)
100yr ARI Storm	- 25 l/s TOTAL
	(5 l/s via OSD, 20 l/s uncontrolled)

A2

ISSUE:		
11. 06. 2019	Prelim	issued for comment
25. 07. 2019	CC	issued for CC submission
29. 11. 2023	CC-A	revised to match S4.55 architectural layout
17.05. 2024	Prelim1	issued for comment re Council comments
22.05. 2024	DA	re issued for DA submission
11. 06 .2024	DA-A	DRAINS data amended

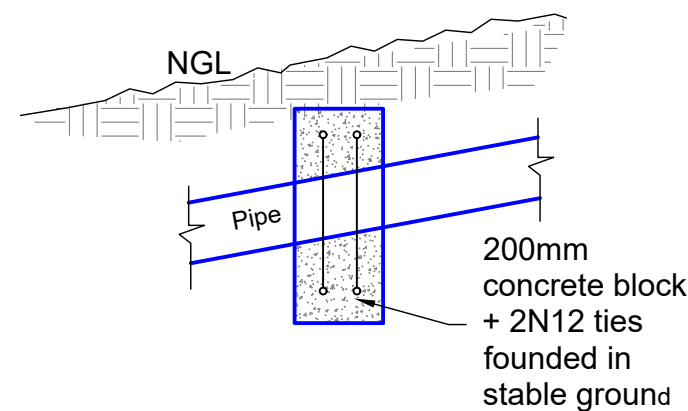
Barrenjoey Consulting Engineers Pty Ltd
Stormwater Structural Civil
PO Box 672
Avalon NSW 2107
M: 0418 620 330
E: lucasbce@bigpond.com
ABN: 13124694917
ACN: 124694917

PROJECT:
PROPOSED
ALTERATIONS & ADDITIONS
89 WOORARRA RD
NARRABEEN
for ~ TEDESCO FAMILY

DRAWING :
STORMWATER
MANAGEMENT PLAN

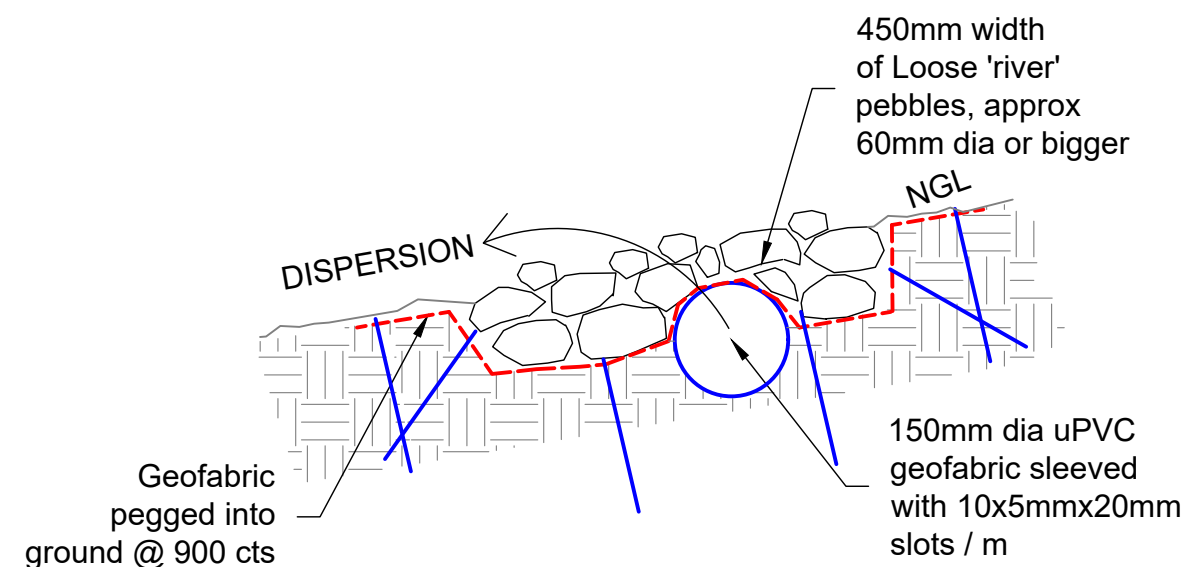
Job No :
190601
Drawing No :
SW1 DA-A
Document Certification
Barrenjoey Consulting Engineers Pty Ltd
per
Lucas Molloy MIEA CPEng NER Director

6/24



ANCHOR BLOCK DETAIL

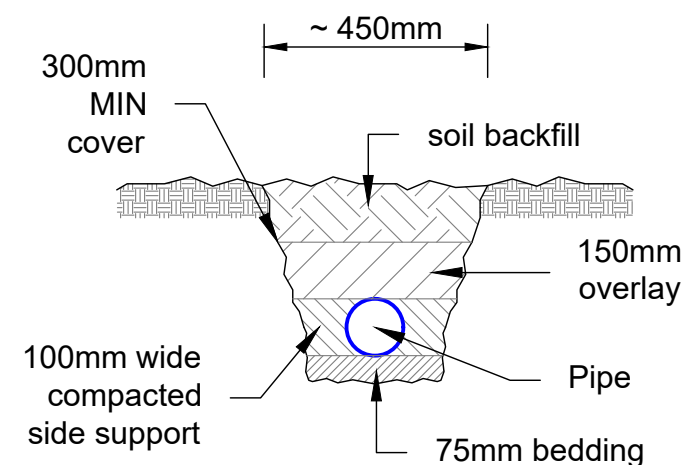
TO BE INSTALLED AT 6m CTS
IF PIPE SLOPE > 1V TO 5H



LEVEL SPREADER DISPERSION PIPE DETAIL

NTS

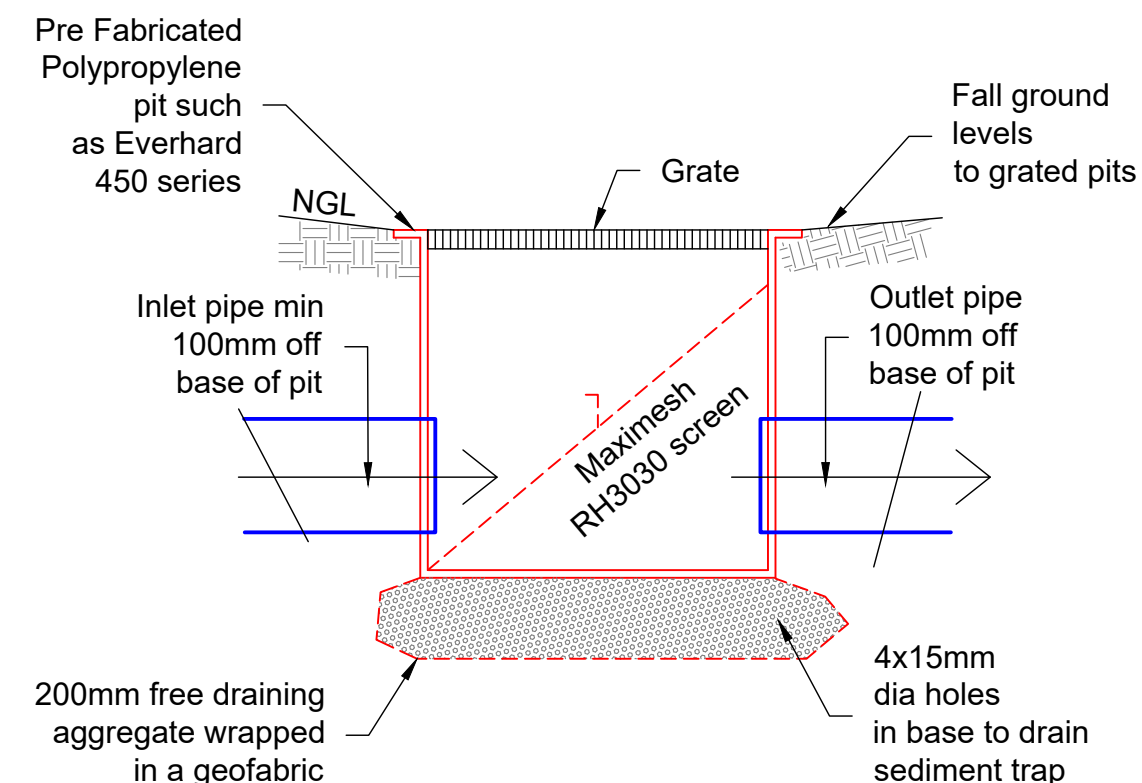
PIPE TO BE LOCATED MIN 5m OFF REAR BOUNDARY AND 3m OFF SIDE BOUNDARIES. TO BE LAID GENERALLY HORIZONTALLY ALONG THE NATURAL CONTOUR OF THE SITE, WITH 25mm FALL FROM THE CENTRAL IO TO END IOs. THE LOCATION, DEPTH AND EXTENT TO BE APPROVED BY THE GEOTECHNICAL CONSULTANT. ENCASE PIPE WITH MASS CONCRETE THRUST / STABILIZING BLOCKS ALONG LENGTH AT 3m CTS



TYPICAL PIPE & TRENCH DETAIL

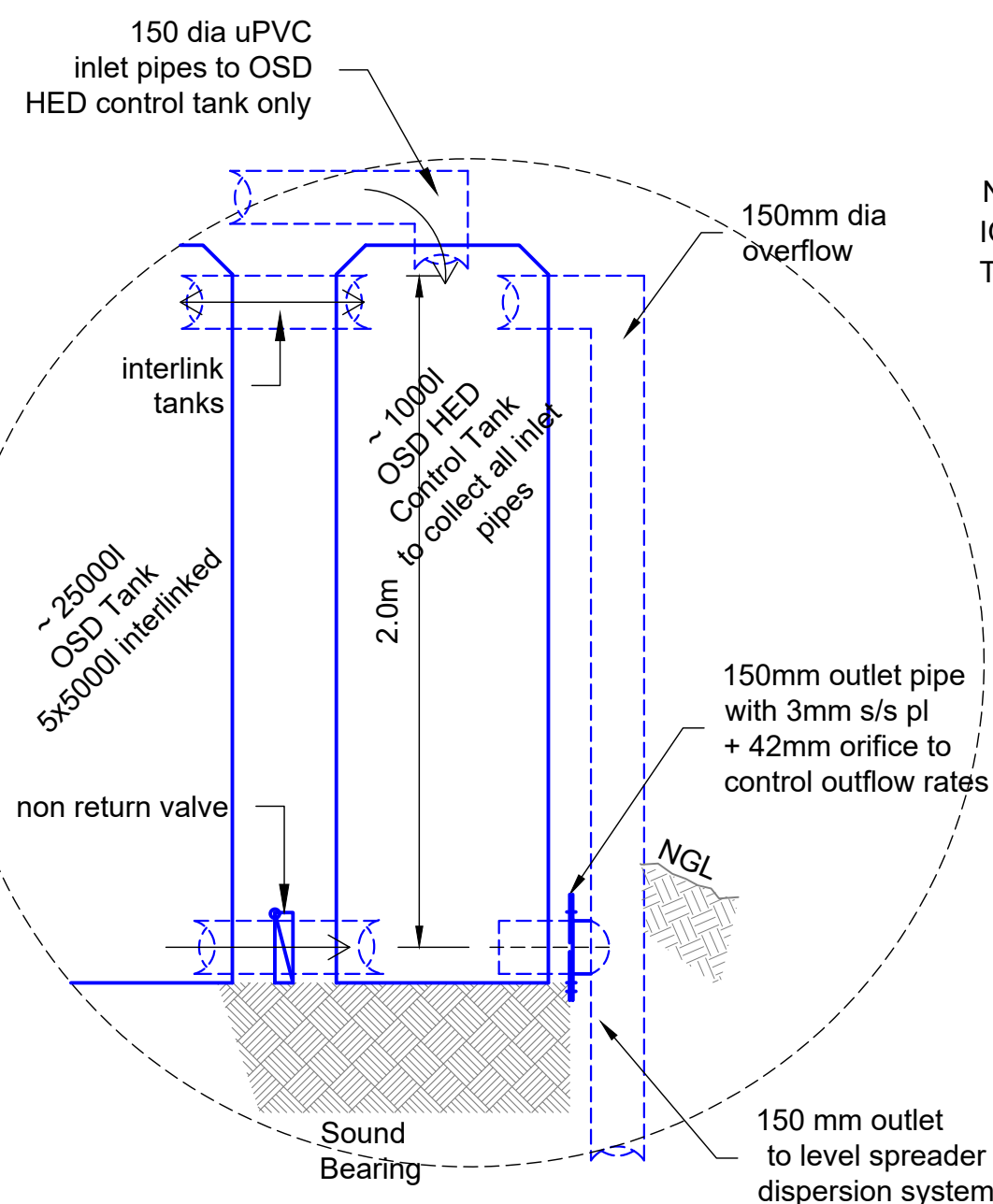
~ 1 : 20

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



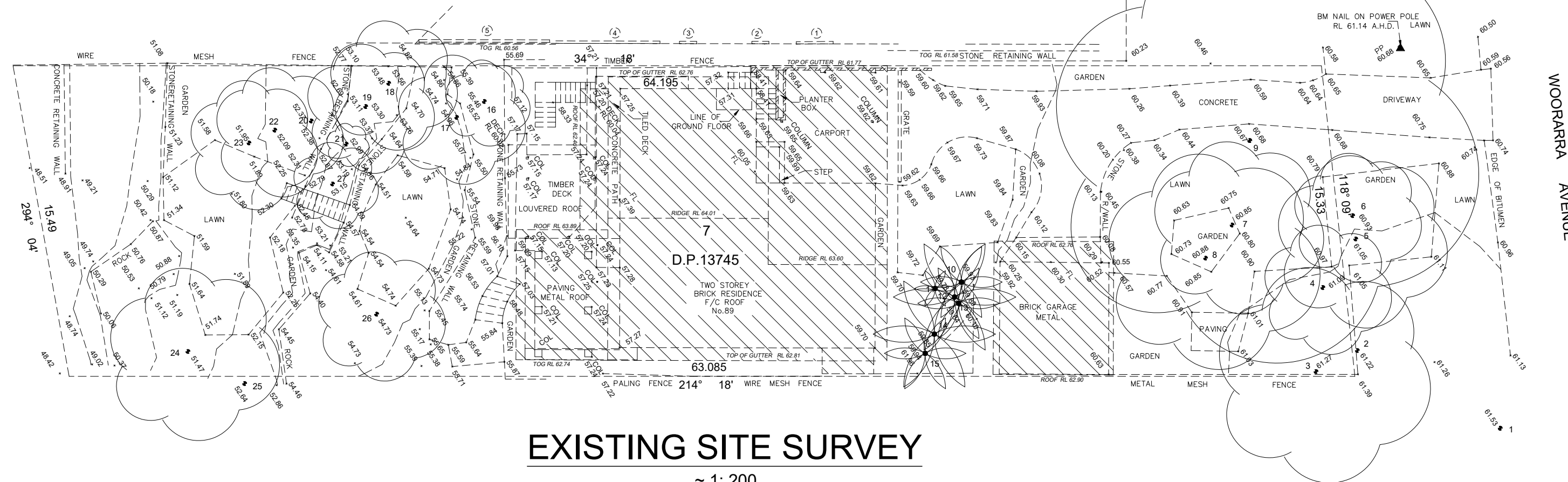
TYPICAL PIT DETAIL

NTS



OSD HED CONTROL TANK DETAIL

1:20



EXISTING SITE SURVEY

~ 1 : 200

Refer to survey ref 10053 / 18 by *Stutchbury Jacques Pty Ltd* for detail.

NOTE - NO FORMAL STORM WATER DISPOSAL SYSTEM IDENTIFIED

EXISTING SYSTEM TO BE EXPOSED AND DOCUMENTED DURING CONSTRUCTION

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ABN: 13124694917
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PROJECT:
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ALTERATIONS & ADDITIONS
89 WOORARRA RD
NARRABEEN
for ~ TEDESCO FAMILY

DRAWING :
STORMWATER
MANAGEMENT DETAILING 1

Job No :
190601
Drawing No :
SW2_{DA-A}

Document Certification
Barrenjoey Consulting Engineers Pty Ltd
per
Lucas Molloy MIEA CP Eng NER Director

A2

WOORARRA AVENUE

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