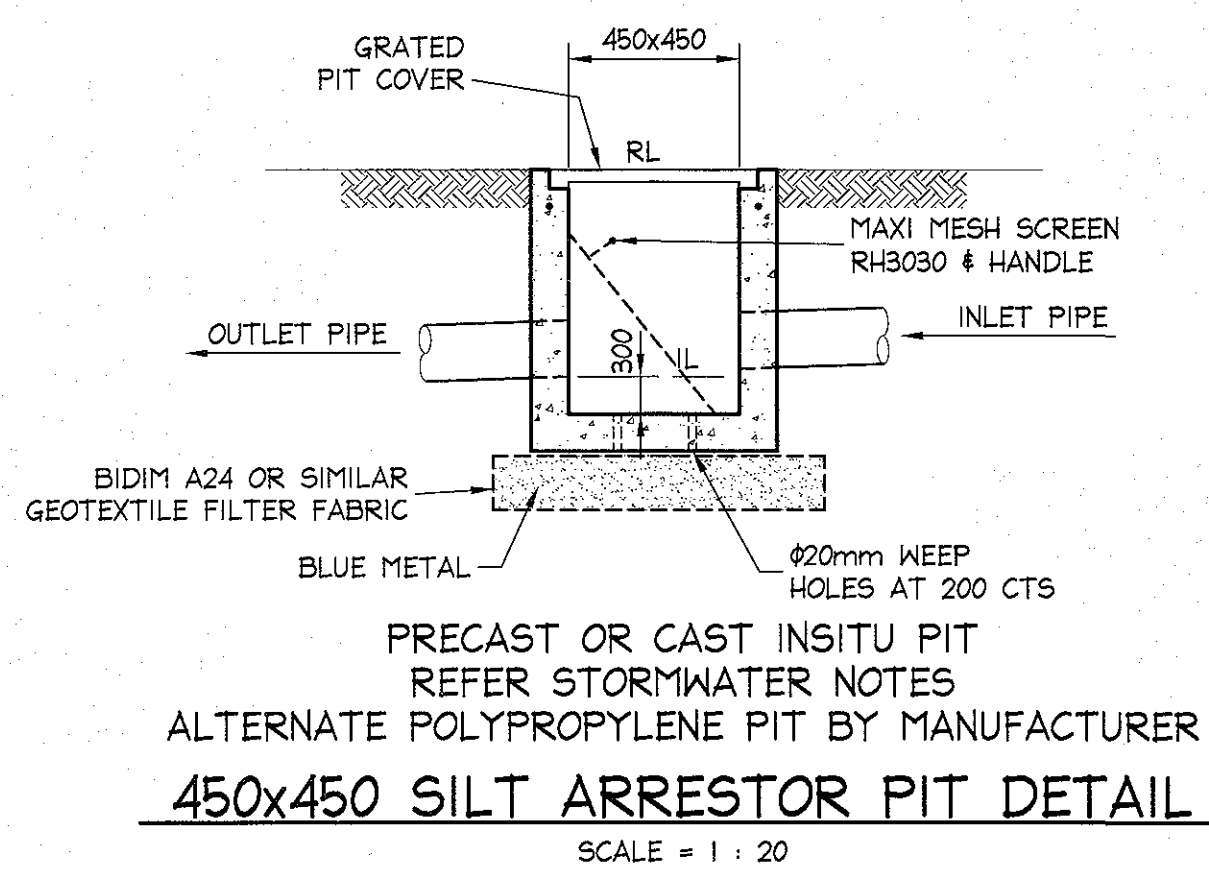


LOWER LEVEL DRAINAGE PLAN
SCALE = 1 : 100

STORMWATER NOTES:

- 1 - ALL PIPES TO BE 100mm Ø UNLESS NOTED OTHERWISE.
- 2 - ALL PIPES TO BE uPVC TO AS 1254-2002 UNLESS NOTED OTHERWISE.
- 3 - ALL PIPES TO BE LAYED AT 1% MINIMUM GRADE UNLESS NOTED OTHERWISE.
- 4 - ALL PIPES SHALL BE Laid ON A 75mm SAND BED, COMPACTED TO 100% S.M.D.D. BELOW PAVEMENTS. (NO COMPACTION REQUIRED BELOW LANDSCAPING) COVER TO SURFACE FROM TOP OF PIPE TO BE 300mm MINIMUM. BACKFILL TO BE ADEQUATELY CONSOLIDATED AROUND PIPES BY METHOD OF RAMMING AND WATERING IN. TRENCHES TO BE FILLED WITH GRANULAR MATERIAL AS SPECIFIED.
- 5 - ALL DOWN PIPES TO BE 100mm Ø UNLESS NOTED OTHERWISE.
- 6 - DOWN PIPE LOCATIONS ARE INDICATIVE ONLY. LOCATIONS TO BE CONFIRMED WITH ARCHITECT PRIOR TO COMMENCEMENT WITH WORK.
- 7 - PROVIDE CLEANING EYES AT ALL DOWNPIPES.
- 8 - ALL PITS TO BE CAST INSITU OR, IF PRECAST, APPROVED BY ENGINEER. CAST INSITU PITS TO HAVE 150mm THICK CONCRETE WALLS AND BASE. WALLS TO BE REINFORCED WITH 1 N12 TOP TIE UNLESS NOTED OTHERWISE. CAST INSITU PITS GREATER THAN 1000 DEEP TO BE MINIMUM 900x600 AND TO HAVE 150mm THICK CONCRETE WALLS AND BASE. WALLS TO BE REINFORCED WITH N12 AT 300 EACH WAY UNLESS NOTED OTHERWISE.
- 9 - ALL PITS GREATER THAN 1000mm DEEP SHALL HAVE STEP IRONS AS PER COUNCIL STANDARDS.
- 10 - ALL WORK TO BE IN ACCORDANCE WITH LOCAL COUNCIL STANDARDS AND SPECIFICATIONS.
- 11 - PRIOR TO COMMENCING ANY SITE WORKS THE CONTRACTOR SHALL IMPLEMENT EROSION CONTROL MEASURES TO APPROVED SEDIMENT AND EROSION CONTROL PLAN, EPA GUIDELINES AND COUNCIL SPECIFICATIONS. ALL MEASURES TO REMAIN IN PLACE UNTIL COMPLETION AND STABILIZATION OF THE SITE TO COUNCIL SATISFACTION.

- 12 - ALL LEVELS SHOWN ARE TO AHD
- 13 - ENSURE THAT ALL PITS AND STORMWATER PIPES ARE LOCATED CLEAR FROM TREE ROOT SYSTEMS.
- 14 - ALL EXISTING EARTHENWARE PIPES TO BE UPGRADED TO uPVC.
- 15 - ALL WORKS TO BE IN ACCORDANCE WITH AS 3500-2003 NATIONAL PLUMBING DRAINAGE CODE PART 3 - STORMWATER DRAINAGE.
- 16 - UNLESS NOTED OTHERWISE, SUB-SOIL DRAINS ARE TO BE INSTALLED IN ACCORDANCE WITH AS3500.3 ALONGSIDE WALLS THAT IMPEDE THE NATURAL FLOW OF GROUNDWATER. THIS MAY ALSO INVOLVE TRENCHING INTO THE CLAY OR ROCK SUBGRADE TO DIRECT GROUNDWATER AWAY FROM STRUCTURES.
- 17 - IF NOT INDICATED ON PLANS, PROVIDE LEAF CATCHERS TO ALL DOWNPIPES.



LEGEND

- 100mm Ø DOWNPIPE
- NEW STORMWATER PIPE
- STORMWATER PIPE FLOW DIRECTION
- STORMWATER PIT
- GRATED DRAIN
GDI - 150 MIN DEPTH x 150 WIDE GRATED DRAIN

NOTE: ALL DRAINAGE LINES ARE INDICATIVE ONLY. LOCATION MAY VARY DUE TO CONSTRAINTS.

**ONSITE DETENTION CALCULATIONS
ACCORDING TO PITTWATER 21 DCP**

TOTAL SITE AREA	=	1466 m ²
PRE DEVELOPED IMPERVIOUS AREA	=	584 m ² (40 %)
PROPOSED IMPERVIOUS AREA	=	566 m ² (39 %)
FROM "PITTWATER 21 DCP"		
IMPERVIOUS AREA INCREASE IS < 50m ²		
THEREFORE OSD IS NOT REQUIRED		



NO INVESTIGATION OF UNDERGROUND SERVICES HAS BEEN MADE. ALL RELEVANT AUTHORITIES SHOULD BE NOTIFIED PRIOR TO ANY EXCAVATION ON OR NEAR THE SITE.

DEVELOPERS & EXCAVATORS MAY BE HELD FINANCIALLY RESPONSIBLE BY THE ASSET OWNER SHOULD THEY DAMAGE UNDERGROUND NETWORKS.

CARELESS DIGGING CAN:

- CAUSE DEATH OR SERIOUS INJURY TO WORKERS AND THE GENERAL PUBLIC
- INCONVENIENCE USERS OF ELECTRICITY, GAS, WATER AND COMMUNICATIONS
- LEAD TO CRIMINAL PROSECUTION AND DAMAGES CLAIMS
- CAUSE EXPENSIVE FINANCIAL LOSSES TO BUSINESS
- CUT OFF EMERGENCY SERVICES
- DELAY PROJECT COMPLETION TIMES WHILE THE DAMAGE IS REPAIRED

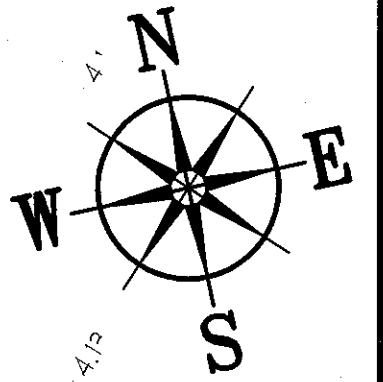
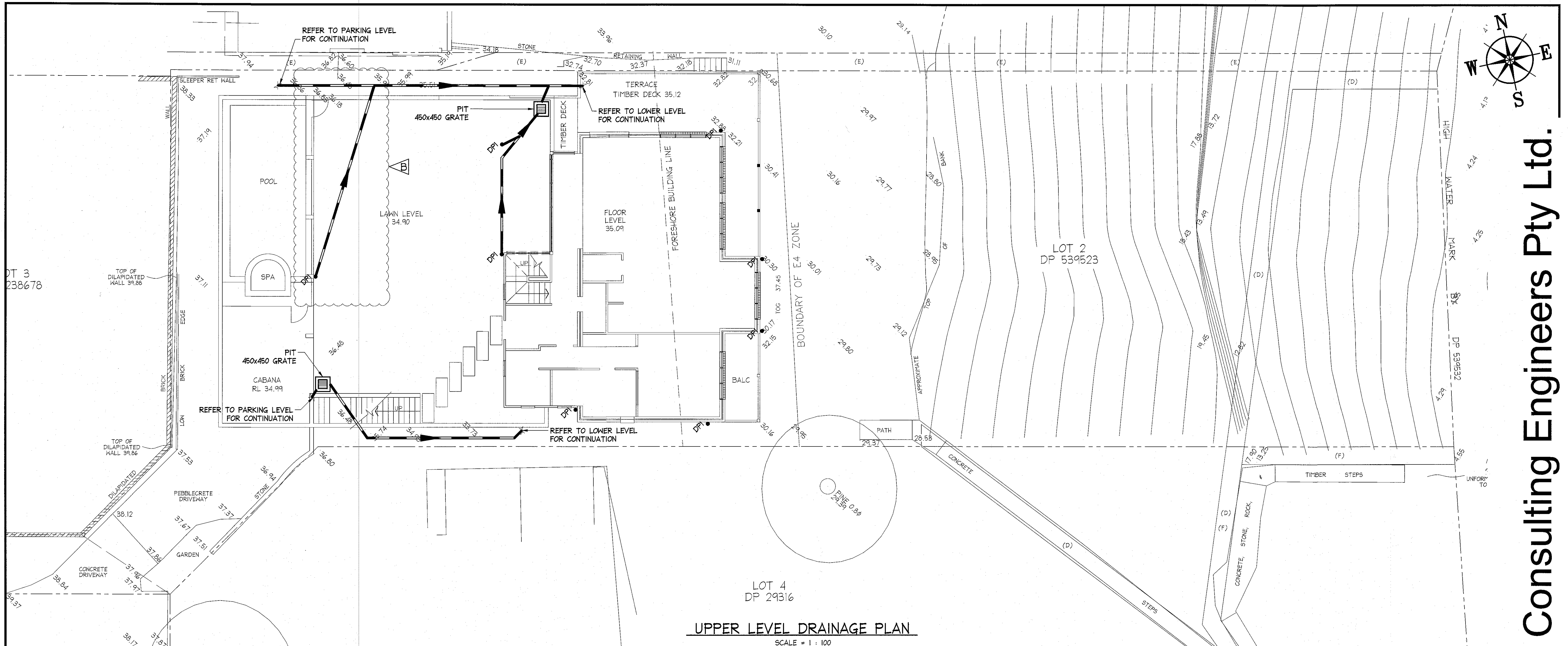
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AI	DOCUMENT CERTIFICATION		NORTHERN BEACHES Consulting Engineers P/L A.C.N. 076 121 616 A.B.N. 24 076 121 616 Suite 207, 30 FISHER ROAD DEE WHY N.S.W. 2099 Ph: (02) 9984 7000 Fax: (02) 9984 7444 e-mail: nb@nbconsulting.com.au web page: www.nbconsulting.com.au	Architect:	Project:	Date:	Design:	Drawn:	Review:
	18-05-15	A		ISSUE FOR DA	TJ	THE DESIGN SECTION	ALTERATIONS & ADDITIONS AT: 168A BARRENJOEY RD, BUNGAN BEACH	APRIL 2015	SS
Date:	Rev:	Amendment:	By:	Client:	Drawing Title:	Job No:	Drawing No:	Rev:	
				MICHAEL & JO SLATER	LOWER LEVEL DRAINAGE PLAN	150279	D01	A	

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LEGEND

- 100mm Ø DOWNPIPE
- NEW STORMWATER PIPE
- STORMWATER PIPE FLOW DIRECTION
- PIT
- STORMWATER PIT
- GRATED DRAIN
- GDI - 150 MIN DEPTH x 150 WIDE GRATED DRAIN

NOTE: ALL DRAINAGE LINES ARE INDICATIVE ONLY. LOCATION MAY VARY DUE TO CONSTRAINTS.



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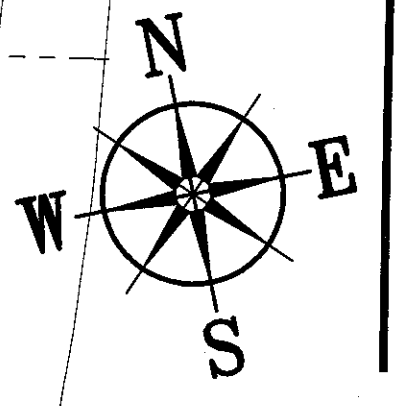
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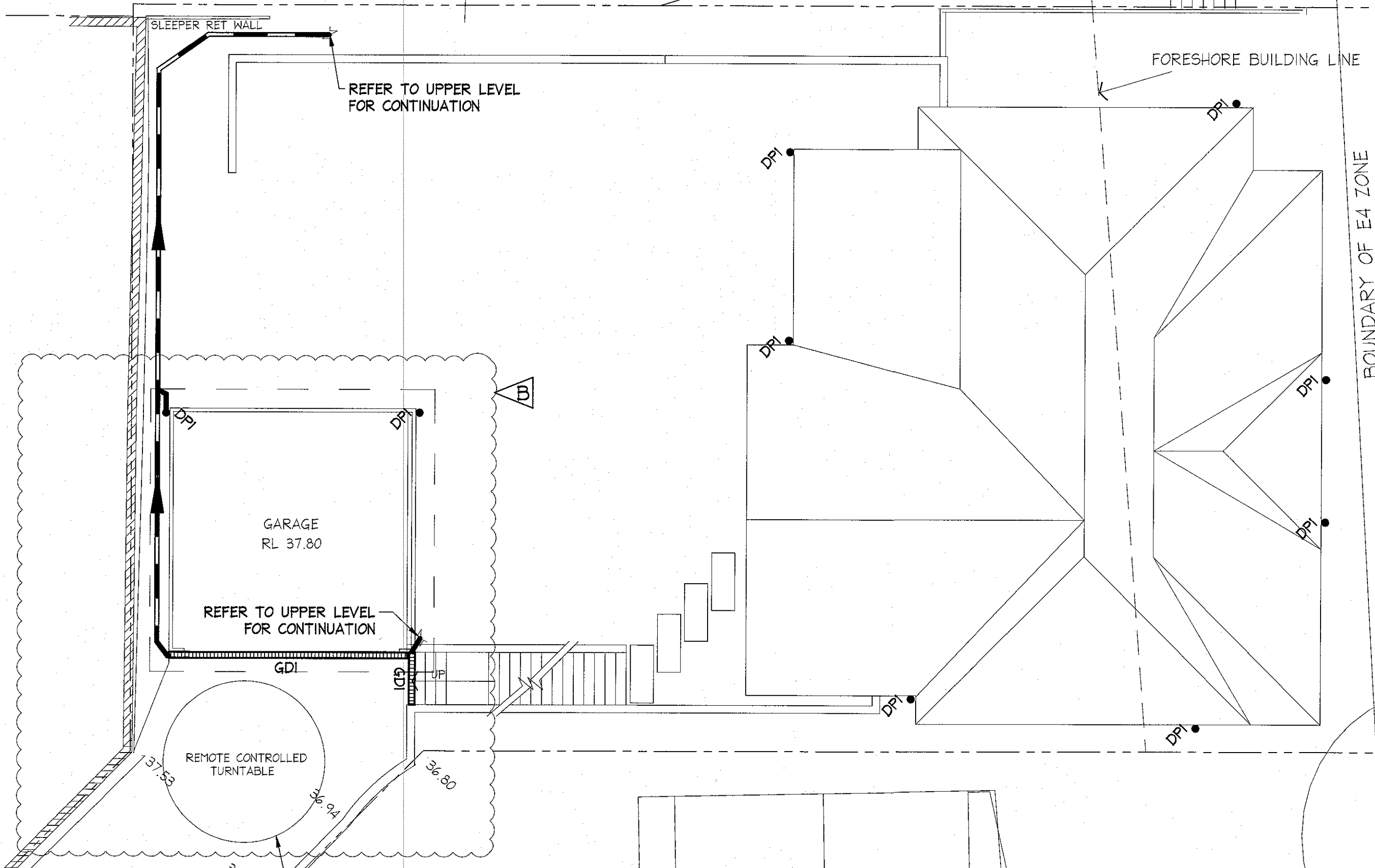
IF IN DOUBT ASK

AI		DOCUMENT CERTIFICATION		NORTHERN BEACHES Consulting Engineers P/L		Architect:		Project: ALTERATIONS & ADDITIONS AT: 168A BARRENJOEY RD, BUNGAN BEACH		Date:	Design:	Drawn:	Review:
		Date: 19/6/15		A.C.N. 076 121 616 A.B.N. 24 076 121 616		THE DESIGN SECTION		APRIL 2015		SS	TJ		
19-06-15		B	DOWNPIPE RELOCATED TO SUIT LATEST ARCHITECTURAL PLANS	Suite 207, 30 FISHER ROAD		Client:		Drawing Title:		Job No:			
18-05-15		A	ISSUE FOR DA	Ph: (02) 9984 7000 Fax: (02) 9984 7444		MICHAEL & JO SLATER		UPPER LEVEL DRAINAGE PLAN		150279	D02	B	
Date:	Rev:	Amendment:		By: Stewart McGeady (Director Northern Beaches Consulting Engineers)		www.nbcconsulting.com.au							

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LOT 3
DP 238678



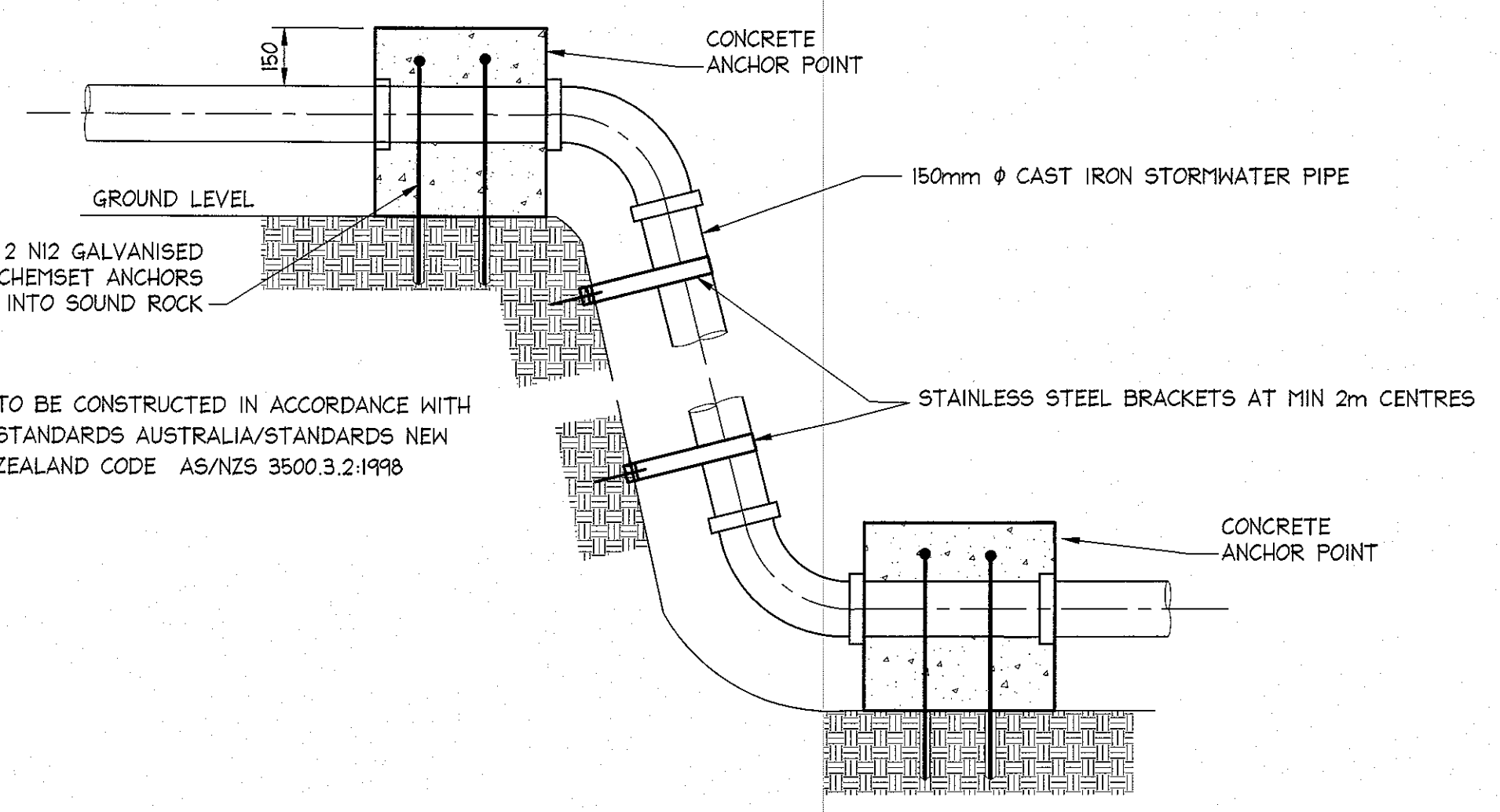
LOT 2
DP 539523

LOT 4
DP 29316
PARKING LEVEL DRAINAGE PLAN
SCALE = 1 : 100

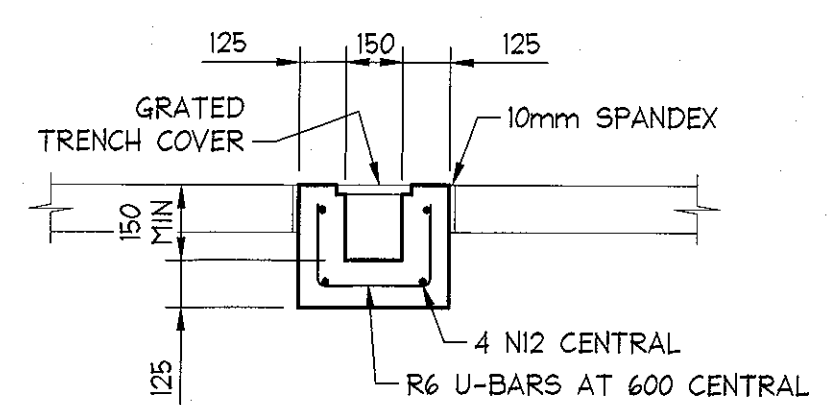
LEGEND

- DP • 100mm ϕ DOWNPIPE
- NEW STORMWATER PIPE
- > STORMWATER PIPE FLOW DIRECTION
- PIT
- STORMWATER PIT
- GDI
- GRATED DRAIN
GDI - 150 MIN DEPTH x 150 WIDE GRATED DRAIN

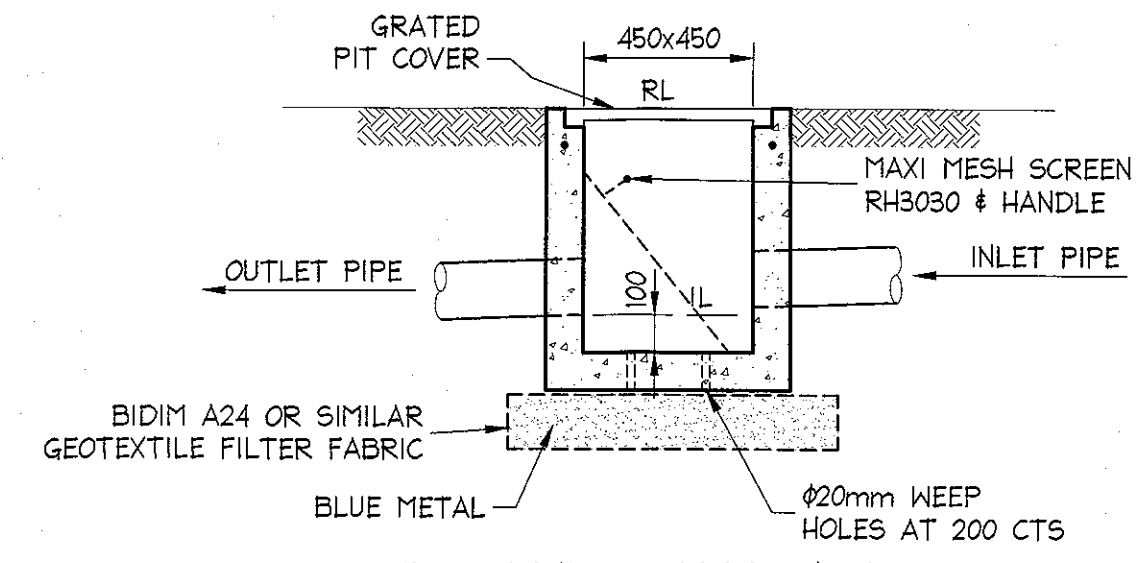
NOTE: ALL DRAINAGE LINES ARE INDICATIVE ONLY.
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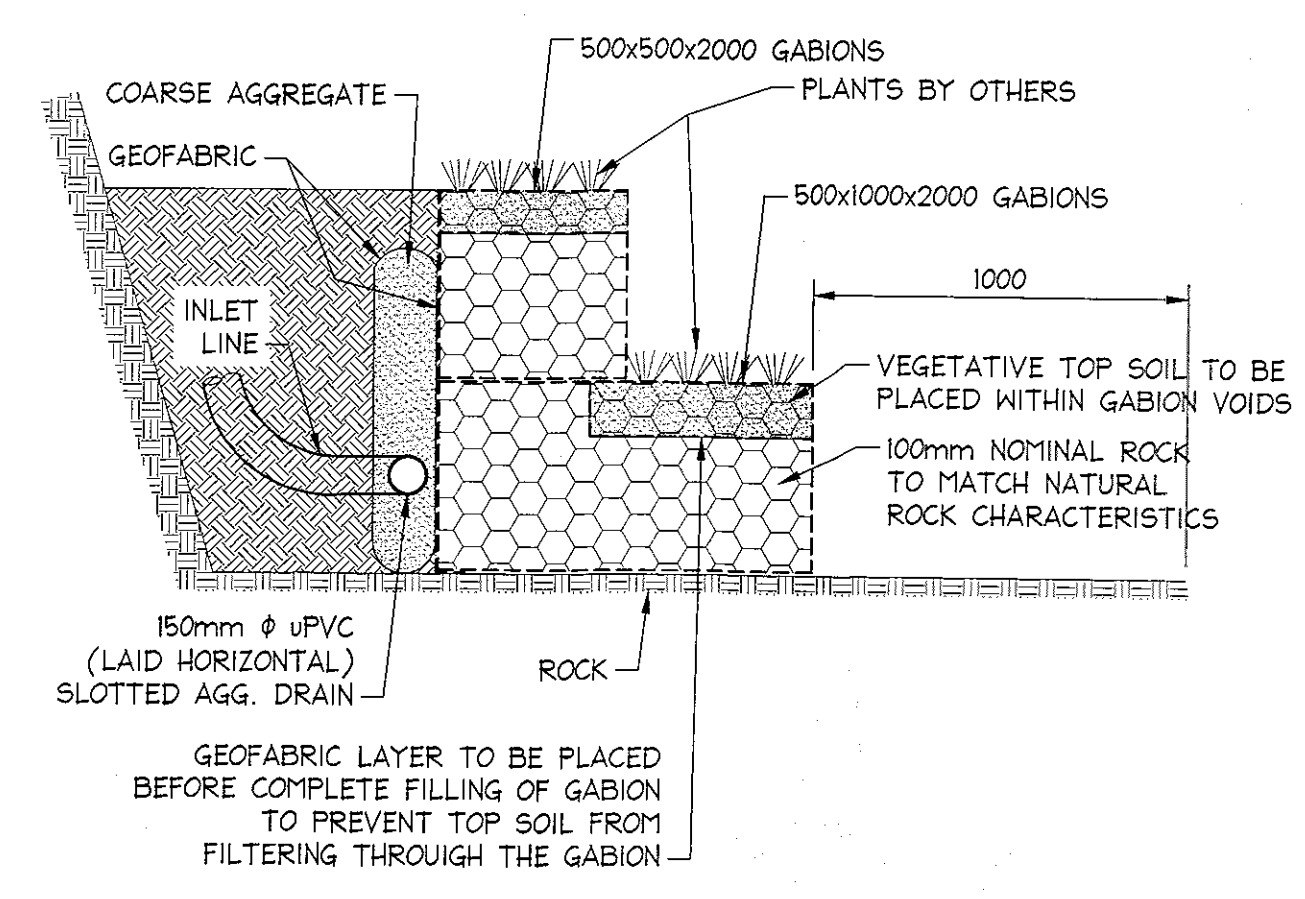
ANCHOR BLOCKS TO BE LOCATED AT THE BEND OR JUNCTION AT THE TOP AND BOTTOM OF THE INCLINED SITE STORMWATER DRAIN
CONCRETE ANCHOR POINT DETAIL
FOR EARTH SLOPE GREATER THAN 1 V. TO 3 H.
SCALE = 1 : 20



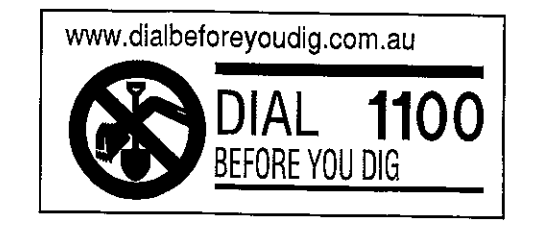
OR PRECAST GRATED DRAIN
ALTERNATE POLYPROPYLENE DRAIN BY MANUFACTURER
TYPICAL GRATED DRAIN
SCALE = 1 : 20



PRECAST OR CAST INSITU PIT
REFER STORMWATER NOTES
ALTERNATE POLYPROPYLENE PIT BY MANUFACTURER
450x450 PIT DETAIL
SCALE = 1 : 20



DISPERSION WALL DETAIL
DENOTED D.W. ON PLAN
SCALE = N.T.S.



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19-06-15	B	GARAGE RELOCATED TO MATCH LATEST ARCHITECTURAL PLANS	TJ
18-05-15	A	ISSUE FOR DA	TJ
Date:	Rev:	Amendment:	By:

DOCUMENT CERTIFICATION

Date: 19/6/15

Stewart McGeady
B.E. (Civil), MIEAust, P.Eng
(Director Northern Beaches Consulting Engineers)

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Architect:
THE DESIGN SECTION

Client:
MICHAEL & JO SLATER

Project:
**ALTERATIONS & ADDITIONS AT:
168A BARRENJOEY RD, BUNGAN BEACH**

Drawing Title:
**PARKING LEVEL DRAINAGE PLAN
& TYPICAL DETAILS**

Date:	Design:	Drawn:	Review:
APRIL 2015	SS	TJ	
Job No:	Drawing No:	Rev:	
150279	D03	B	

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