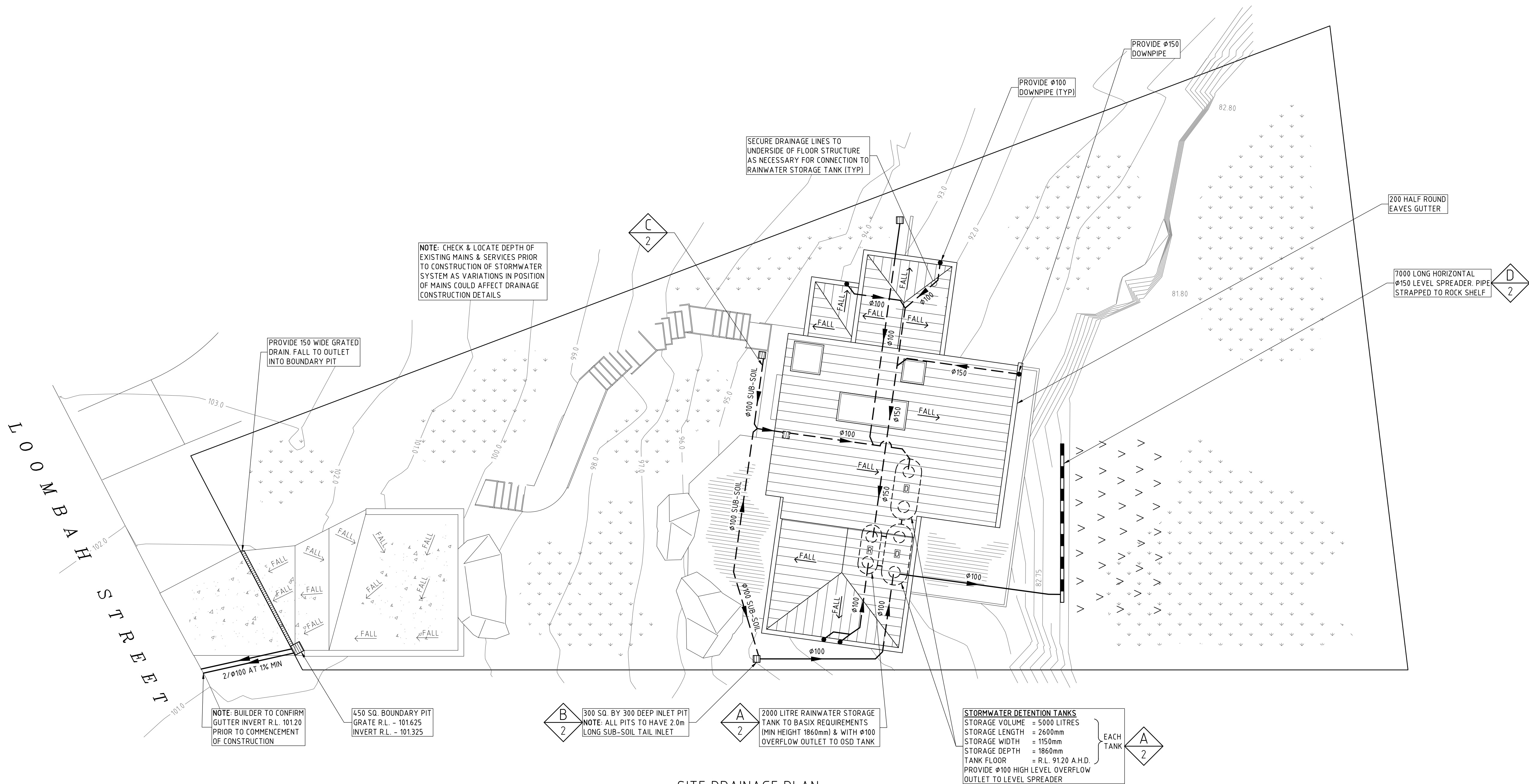
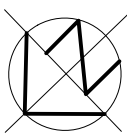




SITE DRAINAGE PLAN
SCALE 1:100

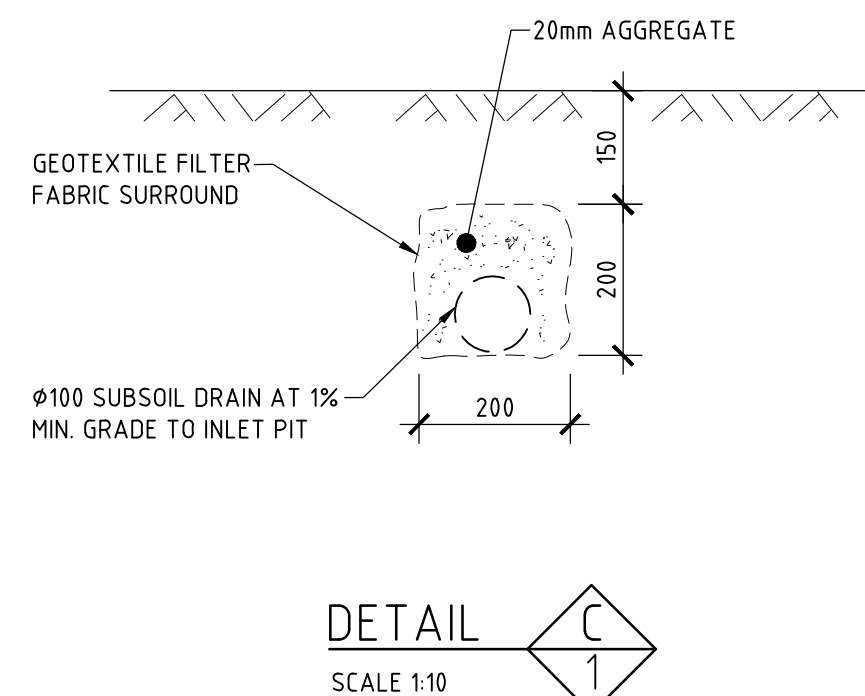
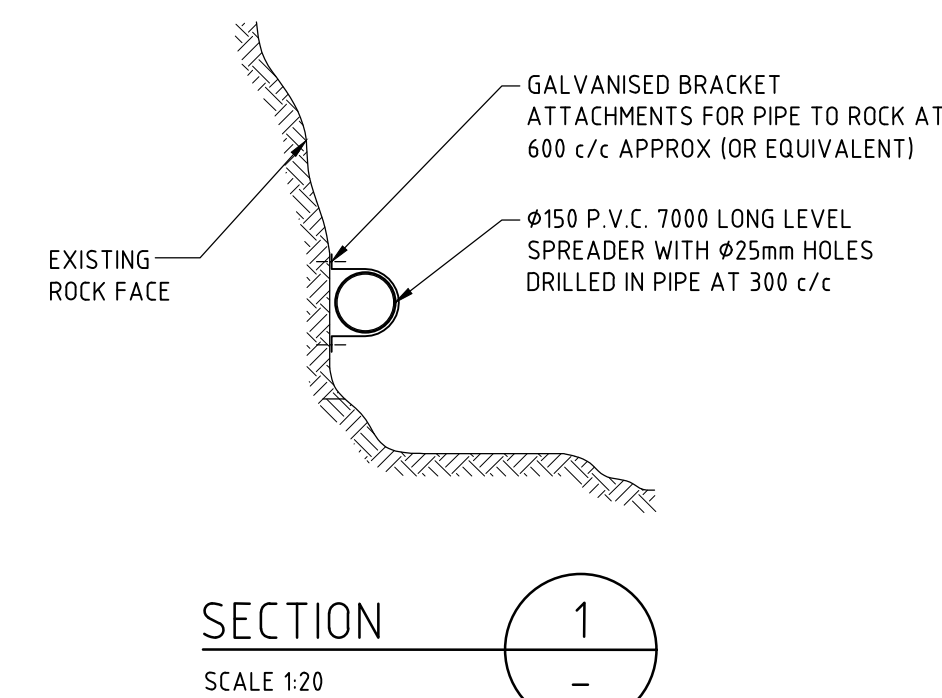
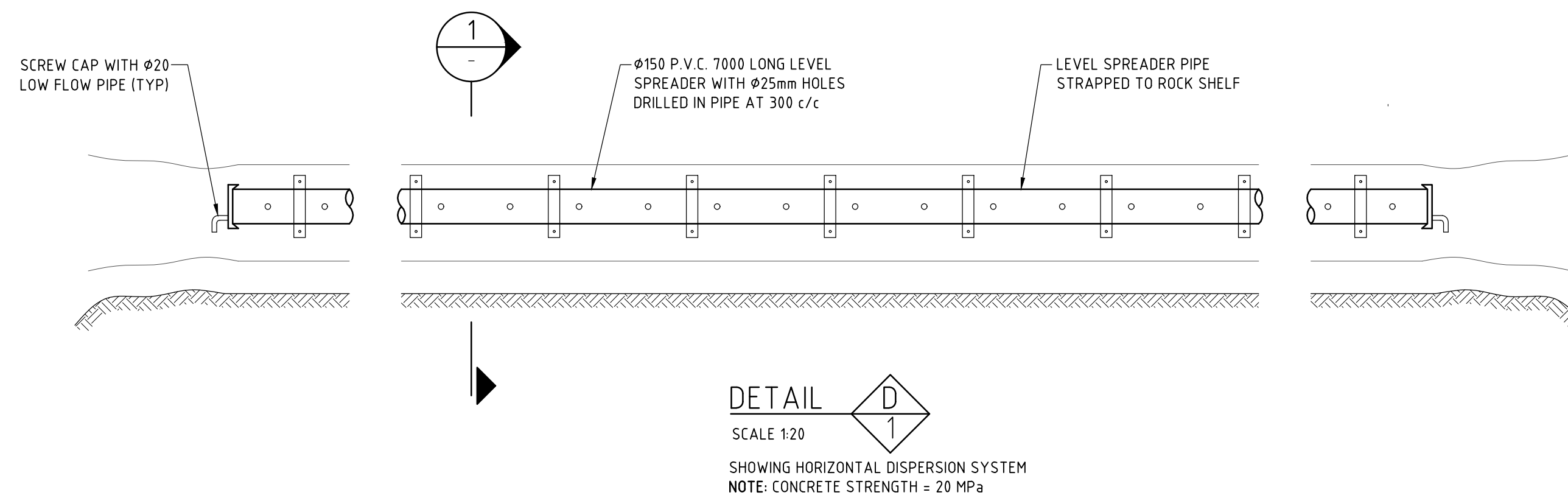
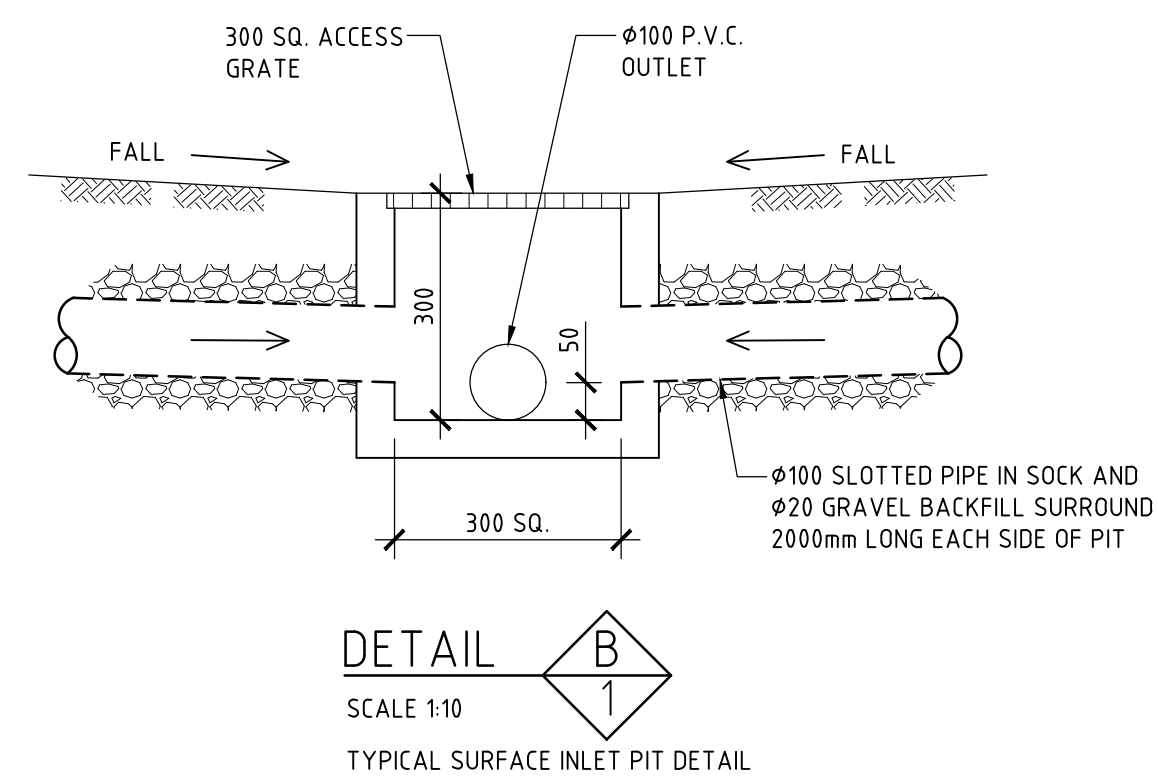
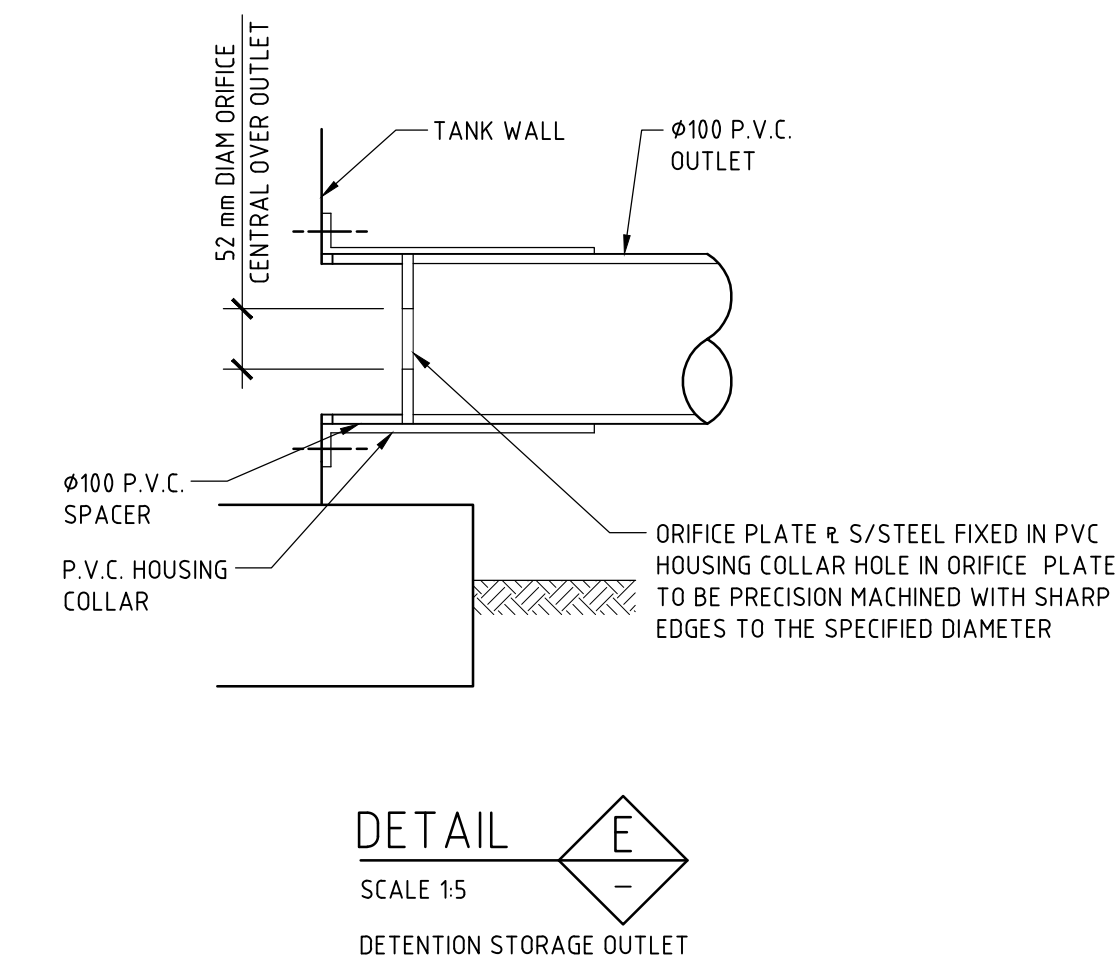
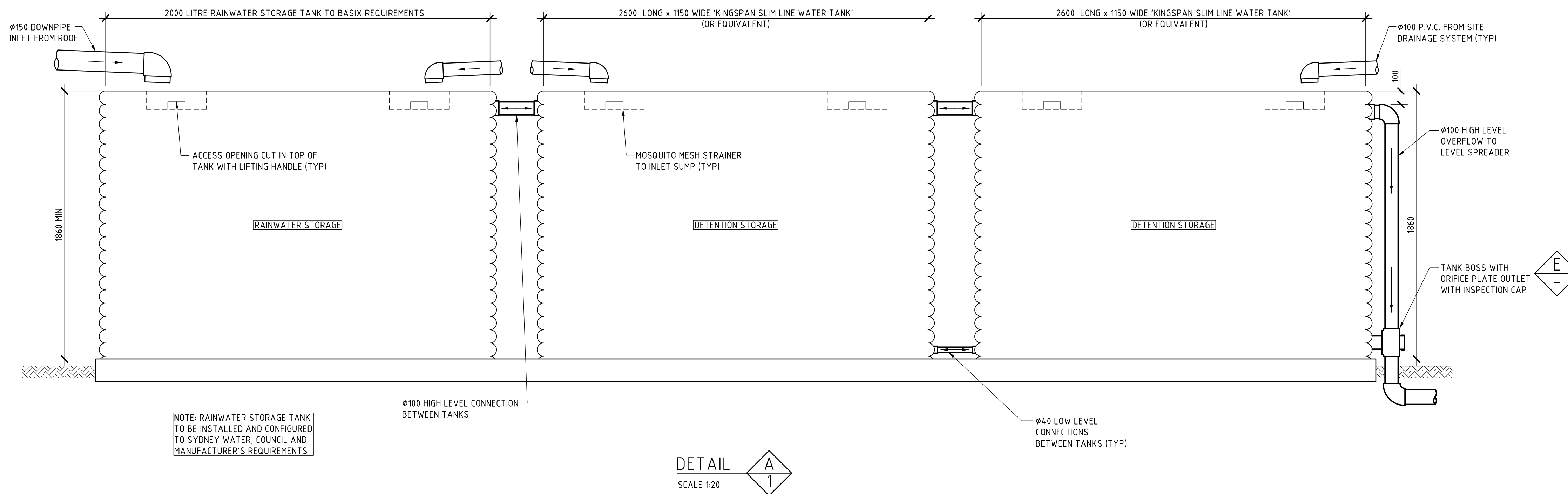
DRAINAGE NOTES	
1.	+ DENOTES EXISTING GROUND LEVEL.
2.	FALL STORMWATER PIPES AT 1% MIN UNLESS OTHERWISE NOTED.
3.	SUB-SOIL DRAINAGE TO BE CONNECTED TO THE SITE DRAINAGE SYSTEM AS NECESSARY.
4.	SURFACE GRATES 300 SQ. UNLESS OTHERWISE NOTED.
5.	ALL STORMWATER PIPES TO HAVE SOLVENT CEMENT WATERTIGHT JOINTS.
6.	CHECK & LOCATE DEPTH OF EXISTING MAINS & SERVICES PRIOR TO CONSTRUCTION OF STORMWATER SYSTEM AS VARIATIONS IN POSITION OF MAINS COULD AFFECT DRAINAGE CONSTRUCTION DETAILS.
7.	INSPECTIONS MUST BE UNDERTAKEN BY THIS OFFICE (BY PRIOR ARRANGEMENT WITH ENGINEER) DURING CONSTRUCTION TO ENABLE FULL CERTIFICATION UPON COMPLETION OF WORKS.
8.	ALL CONSTRUCTION OF COUNCIL DRAINAGE WORKS TO COMPLY WITH COUNCIL STANDARD.
9.	REMOVE REDUNDANT DRAINAGE PITS AND SEAL PIPES.
10.	PIT BENCHING TO BE HALF THE OUTGOING PIPE DIAMETER. CONCRETE FOR BENCHING TO BE 20 MPa MASS CONCRETE.
11.	APPROVED PRE-CAST PITS MAY BE USED.
12.	ALL PIPES TO BE LAID ON COMPACTED FINE CRUSHED ROCK OR SAND BEDDING 75mm THICK & PIPES BACKFILLED WITH COMPACTED SAND TO 300mm ABOVE TOP OF PIPE, ELSE ATTACHED TO UNDERSIDE OF STRUCTURE AT 600mm c/c AS NECESSARY.
13.	PIPE ROUTES SHOWN ARE INDICATIVE ONLY AND SHOULD BE AS NECESSARY ACCORDING TO SITE CONDITIONS, TREE POSITIONS ETC. CONFIRM SIGNIFICANT CHANGES IN PIPES SYSTEM DETAILS WITH SUPERVISING ENGINEER PRIOR TO COMMENCEMENT OF DRAINAGE CONSTRUCTION WORKS.
14.	CONTRACTOR SHALL ENSURE THAT SERVICES TO BUILDINGS NOT AFFECTED BY THE WORKS ARE NOT DISRUPTED. CONTRACTOR SHALL CONSTRUCT TEMPORARY SERVICES TO MAINTAIN EXISTING SUPPLY TO BUILDINGS WHERE REQUIRED. ONCE WORKS ARE COMPLETE AND COMMISSIONED THE CONTRACTOR SHALL REMOVE ALL TEMPORARY SERVICES AND MAKE GOOD ALL DISTURBED AREAS.
15.	STORMWATER SYSTEM REQUIRES SIGNIFICANT MAINTENANCE DUE TO POTENTIAL HIGH POLLUTANT LOAD. FILTERS AND POLLUTANT TRAPS SHOULD BE CHECKED AFTER LARGE STORM EVENTS AND CLEANED EVERY 6 MONTHS.
16.	PLUMBING AND DRAINAGE WORKS TO COMPLY WITH AS-3500, THE NATIONAL DRAINAGE & PLUMBING CODE.
17.	WHERE POSSIBLE DRAINAGE LINES SHALL BE LAID IN AREAS PREVIOUSLY DISTURBED BY OTHER SITE WORKS AND FOLLOW TOPOGRAPHICAL FEATURES TO REDUCE IMPACT AND AVOID TREE ROOTS.
18.	THIS STORMWATER MANAGEMENT PLAN HAS BEEN PREPARED FOR D.A. SUBMISSION TO COUNCIL AND DOES NOT NECESSARILY CONTAIN ALL APPROPRIATE INFORMATION TO ENABLE FOR ISSUE TO PLUMBER/BUILDER FOR CONSTRUCTION. CONTACT TAYLOR CONSULTING FOR MORE INFORMATION.
RAINWATER RE-USE NOTES AND SPECIFICATIONS	
1.	ROOF WATER ONLY TO BE DRAINED TO THE RAINWATER STORAGE TANK.
2.	THE RAINWATER STORAGE TANK NEEDS TO BE CONNECTED FOR RE-USE AS REQUIRED BY THE OWNER.
3.	RAINWATER STORAGE TANK TO BE CONFIGURED IN ACCORDANCE WITH SYDNEY WATER SPECIFICATIONS 'GUIDELINES FOR RAINWATER TANK ON RESIDENTIAL PROPERTIES'.
4.	PROVIDE MAINS 'TOP-UP' SUPPLY TO RAINWATER TANK. MAINS TOP-UP ZONE TO BE BASED ON THE DAILY NON-POTABLE USAGE THAT MAY BE EXPECTED FROM THE TANK.
5.	PROVIDE A MECHANICAL PUMPING ARRANGEMENT (IN SOUND-PROOF HOUSING) TO PUMP SUPPLIERS SPECIFICATION TO SUIT INTENDED USE OF RAINWATER STORAGE. PUMPING ARRANGEMENTS MUST COMPLY WITH EPA GUIDELINES.
6.	INLETS TO RAINWATER TANK MUST BE SCREENED TO PREVENT THE ENTRY OF FOREIGN MATTER, ANIMALS OR INSECTS.
7.	A SIGN MUST BE AFFIXED TO THE RAINWATER TANK CLEARLY STATING THAT THE WATER IN THE TANK IS RAINWATER AND IS NOT TO BE USED FOR HUMAN CONSUMPTION.
8.	RAINWATER TANK TO BE PLACED ON A STRUCTURALLY ADEQUATE BASE IN ACCORDANCE WITH THE MANUFACTURER'S OR STRUCTURAL ENGINEER'S DETAILS.
9.	THE TANK MUST NOT BE INSTALLED OVER ANY MAINTENANCE STRUCTURE OR FITTINGS USED BY A PUBLIC AUTHORITY.
10.	RAINWATER TANK AND ASSOCIATED PLUMBING WORKS TO BE INSTALLED AND CONFIGURED BY A LICENSED PLUMBER. PUMP TO BE INSTALLED BY A LICENSED ELECTRICIAN.
STORMWATER SYSTEM DESIGN DATA	
SITE DATA	
SITE AREA = 978m ² (100%)	
PROPOSED IMPERVIOUS AREA = 240m ² (25%)	
PROPOSED LANDSCAPED AREA = 738m ² (75%)	
NORTHERN BEACHES COUNCIL - REGION 1; SOUTHERN CATCHMENTS (ZONE 1)	
TOTAL INCREASE IN IMPERVIOUS AREA = 50m ² AND/OR TOTAL EXISTING IMPERVIOUS AREA = 35% OF TOTAL SITE AREA; OSD REQUIRED	
PARTIAL SITE ANALYSIS	
AREA DRAINING TO OSD & LEVEL SPREADER = 458m ²	
BUILT UPON AREA OSD BYPASS OSD & LEVEL SPREADER = 21m ²	
AREA TO STREET = 52m ²	
OSD SYSTEM DESIGN DATA	
PERMISSIBLE SITE DISCHARGE (STATE OF NATURE FOR CATCHMENT = 458m ²)	
5 YR ARI = 15 l/s	
DEVELOPED SITE FLOWS (FOR CATCHMENT = 479m ²)	
100 YEAR ARI:	
OSD SITE FLOWS = 10 l/s	
BUILT UPON AREA OSD BYPASS FLOWS = 2 l/s	
TOTAL DEVELOPED SITE FLOWS = 12 l/s	
THEREFORE IN SUMMARY, THE 100 YR ARI DEVELOPED SITE FLOWS WITH OSD IS LESS THAN THE 5 YR ARI STATE OF NATURE FLOWS	
DETENTION SYSTEM DATA	
AREA DRAINING TO TANKS = 458m ²	
ORIFICE DIAM = 52 mm	
MAX. 100 YR TWL = R.L. 92.82 (UNIFORM ACROSS BOTH TANKS)	
SSR = 9.69 m ³	

STORMWATER SYSTEM DESIGN DATA

SITE DATA	
SITE AREA = 978 m ² (100%)	
PROPOSED IMPERVIOUS AREA = 240 m ² (25%)	
PROPOSED LANDSCAPED AREA = 738 m ² (75%)	
EXISTING IMPERVIOUS AREA = 0 m ² (0%)	
EXISTING LANDSCAPED AREA = 978 m ² (100%)	

ISSUE DATE	REVISION
20 OCT 2022	CHANGES TO SUIT ARCHITECTS COMMENTS
11 JAN 2023	CHANGES TO SUIT COUNCILS COMMENTS

TITLE STORMWATER MANAGEMENT PLAN 61 LOOMBAH STREET, BILDOLA PLATEAU			
DRAWN CJM	DATE 12 OCTOBER 2022	CHECKED 	SCALE @ A1 1:100
BE Civil (Hons) MIE Aust.			
STORM-1/B			

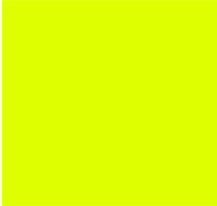
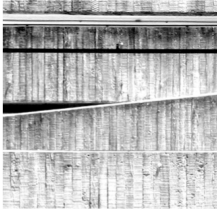


ISSUE DATE	REVISION
20 OCT 2022	CHANGES TO SUIT ARCHITECTS COMMENTS
11 JAN 2023	CHANGES TO COUNCILS COMMENTS

TITLE STORMWATER MANAGEMENT DETAILS 61 LOOMBAH STREET, BILDOLA PLATEAU			
DRAWN CJM	DATE 12 OCTOBER 2022	CHECKED <i>[Signature]</i> BE Civil (Hons) MIE Aust.	SCALE A1 1:20 1:10 1:5

TAYLOR CONSULTING
CIVIL & STRUCTURAL ENGINEERS

STORM-2/B
Revised 10/2023



11 January 2023

General Manager
Northern Beaches Council
PO Box 882
MONA VALE NSW 1660

Dear Sir/Madam,

Re: Stormwater Management Plan – 61 Loombah Street, Bilgola Plateau

With reference to the Development Application for the above property, please find attached a copy of the site Stormwater Management Plan and Details, STORM-1/B & STORM-2/B, for your perusal.

The collected flows from the proposed dwelling are to be discharged via a level spreader. The rate of discharge for the developed area has been restricted to the 5 year state-of-nature level, in accordance with Council's Water Management for Development Policy for low level properties. The level spreader discharges collected runoff as uniform sheet flow across the rear boundary observing the natural fall of the land. The new parking hardstand discharges to the kerb and gutter in Loombah Street.

Note that it is proposed to provide 2 x inter-connected 5000 litre on-site detention tanks and a 2000 litre rainwater storage tank for non-potable domestic reuse beneath the dwelling in accordance with Council and BASIX requirements.

This is to certify that the Stormwater Management Plan layout as shown on STORM-1/B and STORM-2/B by Taylor Consulting Civil & Structural Engineers has been designed in accordance with section 3.1.2, 'Drainage', of the Building Code of Australia Housing Provision and AS/NZS 3500.3.2 – Stormwater Drainage & Northern Beaches Council's Water Management for Development Policy.

Should you require any further information please contact the undersigned.

Yours faithfully
TAYLOR CONSULTING

D M SCHAEFER - Director
B.E. Civil – Hons. M.I.E. Aust. N.E.R.

