

GENERAL NOTES:

1. THESE DRAWINGS ARE NOT TO BE USED FOR CONSTRUCTION IF THE ISSUE DATE PRECEDES THE ISSUE DATE ON THE LATEST ARCHITECTURAL DRAWINGS.
2. DO NOT SCALE FROM THESE DRAWING.
3. ALL DIMENSIONS ARE TO BE VERIFIED ON SITE BY THE BUILDER BEFORE COMMENCING WITH ASSOCIATED WORK.

STORMWATER NOTES:

GENERAL:

- A1. ALL WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE AUSTRALIAN STANDARDS (LATEST VERSION) AND THE REQUIREMENTS OF THE LOCAL COUNCIL AND ANY APPLICABLE AUTHORITIES.
- A2. ALL LEVELS SHOWN ARE TO THE AUSTRALIAN HEIGHT DATUM (AHD) UNLESS NOTED OTHERWISE.
- A3. THE LOCATION OF ALL DRAINAGE ELEMENTS ARE SHOWN INDICATIVELY BASED ON AVAILABLE SURVEY OR OTHER INFORMATION. ALL DRAINAGE ELEMENTS ARE TO BE INSTALLED WITH CONSIDERATION TO SITE CONSTRAINTS AND THE INTENT OF THE DRAINAGE CONCEPT.
- A4. ANY MATERIAL VARIATIONS TO THE DRAINAGE CONCEPT OR DETAILED STORMWATER ELEMENTS MUST BE APPROVED BY NORTHERN BEACHES CONSULTING ENGINEERS PTY LTD PRIOR TO COMMENCEMENT.
- A5. ANY EXCAVATION OR TRENCHING FOR SERVICES ADJACENT TO A STRUCTURE OR PROPERTY BOUNDARY MUST NOT ENCRDACH ON THE 'ZONE OF INFLUENCE', REFER TO THE NCC FOR FURTHER DETAILS.

GENERAL CONSTRUCTION NOTES:

- B1. CONTRACTORS TO LOCATE ALL EXISTING SERVICES PRIOR TO EXCAVATION AND NOTIFY ENGINEER OF ANY POTENTIAL CLASHES WITH THE PROPOSED STORMWATER DRAINAGE SYSTEM.
- B2. ANY ELEMENTS OF THE EXISTING STORMWATER SYSTEM WHICH ARE PROPOSED TO BE RETAINED MUST BE INSPECTED AND APPROVED BY AN ENGINEER PRIOR TO CONSTRUCTION AS BOTH HAVING ADEQUATE CAPACITY TO CATER FOR THE RUNOFF DIRECTED TO IT AND BEING IN ADEQUATE CONDITION FOR USE.
- B3. EXISTING STORMWATER SYSTEM ALSO TO BE INSPECTED BY A SUITABLY QUALIFIED PLUMBER PRIOR TO CONSTRUCTION AND UPGRADED AS REQUIRED IN ACCORDANCE WITH ASS6003.
- B4. CARE SHOULD BE TAKEN WHEN UNDERTAKING WORKS IN THE VICINITY OF TREES NOT TO DISTURB THE TREE ROOT SYSTEM. HAND DIGGING OF TRENCHES MAY BE REQUIRED SUBJECT TO THE PROJECT ARBORISTS REQUIREMENTS. REFER TO THE ARBORIST REPORT FOR EXCAVATION REQUIREMENTS SURROUNDING PROTECTED TREE ROOT ZONES.
- B5. SWIMMING POOL SURCHARGE OVERFLOW TO BE CONNECTED VIA GRAVITY TO THE SENIOR IN ACCORDANCE WITH ASS600. DETAILS AND CERTIFICATION BY OTHERS.
- B6. EXTENT, ALIGNMENT, DEPTH AND CONDITION OF ANY COUNCIL STORMWATER PIPELINE WITHIN A DEVELOPMENT SITE MUST BE VERIFIED PRIOR TO CONSTRUCTION AND THE ENGINEER MUST BE NOTIFIED UPON VERIFICATION. ANY NEW CONNECTION TO A COUNCIL STORMWATER PIPELINE WILL BE SUBJECT TO COUNCIL APPROVAL AND MUST BE INSTALLED IN ACCORDANCE WITH THE LOCAL COUNCIL SPECIFICATIONS.

PIPEWORK INSTALLATION:

- C1. ALL PIPES TO BE MINIMUM 100mm Ø UNLESS NOTED OTHERWISE.
- C2. ALL PIPES TO BE UPVC SENIOR GRADE TO AS 1264 UNLESS NOTED OTHERWISE.
- C3. ALL PIPES TO BE LAYED AT 1% MINIMUM GRADE UNLESS NOTED OTHERWISE.
- C4. ALL CONNECTIONS INTO EXISTING PIPES MUST BE MADE IN THE DIRECTION OF FLOW.
- C5. ANY NEW UPVC CONNECTIONS INTO EXISTING R.C. PIPES MUST BE MADE INTO THE TOP HALF OF THE PIPE USING A FLOWCON CONNECTION FITTING U.N.O
- C6. 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 NO-FINES GRANULAR MATERIAL AS SPECIFIED.
- C7. ALL EXISTING EARTHEDWARE PIPES TO BE UPGRADED TO UPVC.
- C8. MINIMUM PIPE COVER TO ALL IN-GROUND PIPEWORK SHALL BE CARRIED OUT IN ACCORDANCE WITH TABLE 7.1 - ASS6003.
- C9. ALL SUSPENDED PIPE FIXINGS ARE TO BE CARRIED OUT IN ACCORDANCE WITH ASS2022.
- C10. ENSURE THAT ALL STORMWATER PITS AND PIPES ARE LOCATED CLEAR FROM TREE ROOT SYSTEMS.
- C11. ALL PIPEWORK MUST BE INSTALLED WITHIN THE SITE BOUNDARY OF THE DEVELOPMENT SITE. ANY NEW OR EXISTING PIPEWORK EXTENDING THROUGH PRIVATE PROPERTY BEYOND THE BOUNDARY OF THE DEVELOPMENT SITE MUST BE CONTAINED SOLELY WITHIN A DRAINAGE EASEMENT. IF NO DRAINAGE EASEMENT EXISTS, A NEW DRAINAGE EASEMENT MUST BE SOUGHT AND REGISTERED PRIOR TO UTILISING OR INSTALLING PIPEWORK THROUGH NEIGHBOURING PROPERTIES. CONTACT THE ENGINEER IF A DRAINAGE EASEMENT CANNOT BE OBTAINED.

ROOF DRAINAGE:

- D1. ALL DOWN PIPES TO BE 100mm Ø UNLESS NOTED OTHERWISE.
- D2. DOWN PIPE LOCATIONS ARE INDICATIVE ONLY. LOCATIONS TO BE CONFIRMED WITH ARCHITECT PRIOR TO COMMENCEMENT OF WORK.
- D3. PROVIDE CLEANING EYES AT ALL DOWNPIPES.
- D4. GUTTER GUARDS MUST BE INSTALLED ON ALL GUTTERS UNLESS NOTED OTHERWISE.
- D5. ALL EAVES GUTTER AND VALLEY GUTTER SYSTEMS MUST BE INSTALLED IN ACCORDANCE WITH ASS6003.3 REQUIREMENTS.
- D6. ALL BOX GUTTER SYSTEMS MUST BE INSTALLED STRICTLY IN ACCORDANCE WITH THE DETAILS SHOWN ON THE APPROVED STORMWATER MANAGEMENT PLAN. IF NO DETAILS ARE SHOWN, THE BOX GUTTER SYSTEM MUST BE INSTALLED IN ACCORDANCE WITH ASS6003.3. IF ANY CHANGE TO THE BOX GUTTER SYSTEM CONFIGURATION IS PROPOSED, THE ENGINEER MUST BE NOTIFIED FOR A RE-DESIGN. IF THE INSTALLED BOX GUTTER DOES NOT STRICTLY COMPLY WITH THE DESIGN DETAILED ON THE STORMWATER MANAGEMENT PLAN, CERTIFICATION OF THE HYDRAULIC SYSTEM MAY BE REFUSED.
- D7. ALL GREEN ROOFS, PEBBLED ROOFS AND PLANTERS WITH A CONCRETE BASE MUST BE WATERPROOFED AND HAVE DRAINAGE CELL INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATION.

PITS:

- E1. ALL STORMWATER PITS MUST BE INSTALLED IN ACCORDANCE WITH ASS6003.3.
- E2. ALL CONCRETE PITS TO BE CAST INSITU OR, IF PRECAST, APPROVED BY ENGINEER. CAST INSITU PITS TO HAVE 50mm THICK CONCRETE WALLS AND BASE. WALLS TO BE REINFORCED WITH 1#12 TOP THE UNLESS NOTED OTHERWISE. CAST INSITU PITS GREATER THAN 900 DEEP TO BE MINIMUM 900x600 AND TO HAVE 50mm THICK CONCRETE WALLS AND BASE. WALLS TO BE REINFORCED WITH 1#12 AT 300 EACH WAY UNLESS NOTED OTHERWISE.
- E3. MINIMUM INTERNAL DIMENSIONS FOR STORMWATER AND INLET PITS TO BE IN ACCORDANCE WITH TABLE D.2, ASS6003.
- E4. ALL PITS GREATER THAN 1200mm DEEP SHALL HAVE STEP IRONS INSTALLED. STEP IRON INSTALLATION MUST BE IN ACCORDANCE WITH THE RELEVANT AUSTRALIAN STANDARDS.



# Consulting Engineers

STRUCTURAL - CIVIL - STORMWATER - REMEDIAL

RAINWATER RE-USE TANKS:

- K1. CONSIDERING THE ROOF CATCHMENT AREA, LOCATION OF PROPERTY, INTENDED USE OF RAINWATER AND GARDEN SIZE WE RECOMMEND PROVIDING A RAINWATER TANK FOR USE AS PER BASIX REQUIREMENTS, SYDNEY WATER AND NSW HEALTH REQUIREMENTS FOR NON DRINKING USE ONLY.
- K2. THE TANKS PROVIDED WILL REDUCE PRESSURE ON COUNCIL'S STORMWATER INFRASTRUCTURE.
- K3. REFERENCES: COOMBS P.J. & KUCZERA G. (2001), 'RAINWATER TANK DESIGN FOR WATER SUPPLY & STORMWATER MANAGEMENT.' STORMWATER INDUSTRY ASSOCIATION REGIONAL CONFERENCE. PATRICK DUPONT & STEVE SHACKLE, 'RAINWATER' AUSTRALIAN GOVERNMENT (2004), 'GUIDANCE ON USE OF RAINWATER TANKS'.
- K4. ALL CONNECTIONS TO PLUMBING AND RAINWATER TANKS TO BE IN ACCORDANCE WITH SYDNEY WATERS' GUIDE 'INSTALLING A RAINWATER TANK' AVAILABLE AT [www.sydneystwater.com.au](http://www.sydneystwater.com.au)
- K5. PROVIDE A DUAL SUPPLY SYSTEM AND BACKFLOW PREVENTION SYSTEM IN ACCORDANCE WITH 'BASIX-DESIGN GUIDE FOR SINGLE DWELLINGS' BY NSW DEPARTMENT OF INFRASTRUCTURE, PLANNING AND NATURAL RESOURCES.
- K6. IF NOT SPECIFIED ON PLANS, THE FIRST FLUSH SYSTEM IS TO HAVE A MINIMUM SIZE OF 20L PER 100m2 OF ROOF CATCHMENT AREA PRIOR TO ENTERING THE RAINWATER TANK. INDIVIDUAL SITE ANALYSIS IS REQUIRED IN HEAVILY POLLUTED AREAS TO DETERMINE IF LARGER VOLUMES OF FIRST FLUSH RAINWATER ARE TO BE DIVERTED. IF IN DOUBT, CHECK WITH LOCAL HEALTH AUTHORITIES.
- K7. SCREENED DOWNPIPE RAINWATER HEAD OR OTHER SUITABLE LEAF AND DEBRIS DEVICE TO BE INSTALLED ON EACH DOWNPIPE. SCREEN MESH TO BE 4-6mm AND DESIGNED TO BE SELF-CLEANING.
- K8. FIRST FLUSH DEVICES, OR APPROVED ALTERNATIVE, TO BE INSTALLED WITH AN AUTOMATED DIVERSION AND DRAINAGE SYSTEM, THAT IS, NO MANUAL DIVERSION AND DRAINAGE VALVES. REFER TYPICAL FLUSH OUT PIT FOR DETAILS.
- K9. BEFORE PURCHASING MATERIALS OR PAINT TO BE USED ON ROOF CATCHMENT AREAS, THE MANUFACTURER'S RECOMMENDATIONS ON LABELS AND BROCHURES FOR RAINWATER TANK SUITABILITY TO BE READ AND ADHERED TO.
- K10. PRE-STORAGE PITS FOR UNDERGROUND RAINWATER STORAGE TANKS AND FLUSH OUT PITS MAY ASSIST IN LIMITING SILT, AND PREVENT VERMIN, INSECTS (INCLUDING MOSQUITOES) AND DEBRIS FROM ENTERING THE RAINWATER STORAGE AREA.
- K11. BUILDER/PLUMBER TO ENSURE THE INSTALLATION OF THE RAINWATER TANK SYSTEM IS IN ACCORDANCE WITH THE RELEVANT AUSTRALIAN STANDARDS AND THE RAINWATER TANK DESIGN AND INSTALLATION HANDBOOK - HB 280-2006. IF IN DOUBT CONTACT ENGINEER.
- K12. RAINWATER TANK TO BE WATER PROOFED IN ACCORDANCE WITH HB 280-2006

DIAL BEFORE YOU DIG NOTE:

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



MINIMISE YOUR RISK  
AND DIAL BEFORE YOU  
DIG. - TEL. 1100

## NORTHERN BEACHES COUNCIL (WARRINGAH AREA) ON SITE DETENTION SYSTEM CALCULATION SHEET

ADDRESS: 205 HEADLAND ROAD, NORTH CURL CURL

SITE STORMWATER DISPOSAL METHOD

ALL WORKS IN ACCORDANCE WITH WATER MANAGEMENT FOR DEVELOPMENT POLICY, SECTION 5.5

DEVELOPMENT TYPE:	ALTERATION AND ADDITIONS
REGION:	2

SITE DETAILS	
TOTAL SITE AREA	727.2 m <sup>2</sup>
PRE DEVELOPMENT IMPERVIOUS AREA	420 m <sup>2</sup> (58%)
POST DEVELOPMENT IMPERVIOUS AREA	444 m <sup>2</sup> (61%)
INCREASE	24 m <sup>2</sup>

OSD REQUIREMENTS

THIS IS AN ALTERATIONS AND ADDITIONS WITH AN EXISTING EASEMENT THEREFORE NO OSD IS REQUIRED FOR THIS DEVELOPMENT.

SITE STORAGE REQUIREMENT

OSD VOLUME REQUIRED	NIL
RAINWATER 'BASIX' REQUIRED	1 600L (1 660L PROPOSED)

OUTLET CONTROL

METHOD OF DISCHARGE	EXISTING EASEMENT
CONCENTRATED DISCHARGE TO KERB (VIA EXISTING EASEMENT)	22 L/s

DRAWING SCHEDULE:

STORMWATER DRAWINGS

- DOI - STORMWATER GENERAL NOTES
- DO2 - STORMWATER MANAGEMENT DRAINAGE PLANS
- DO3 - STORMWATER MANAGEMENT DRAINAGE PLANS AND DETAILS

ISSUED FOR D.A.  
SUBMISSION ONLY  
NOT FOR  
CONSTRUCTION

IF IN DOUBT ASK

AI

24-02-2021	A	ISSUED FOR DA SUBMISSION		MC	CF
Date:	Issue:	Description:	By:	Review:	

DOCUMENT CERTIFICATION

Date: 26/02/2021  
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(Director NB Consulting Engineers)  
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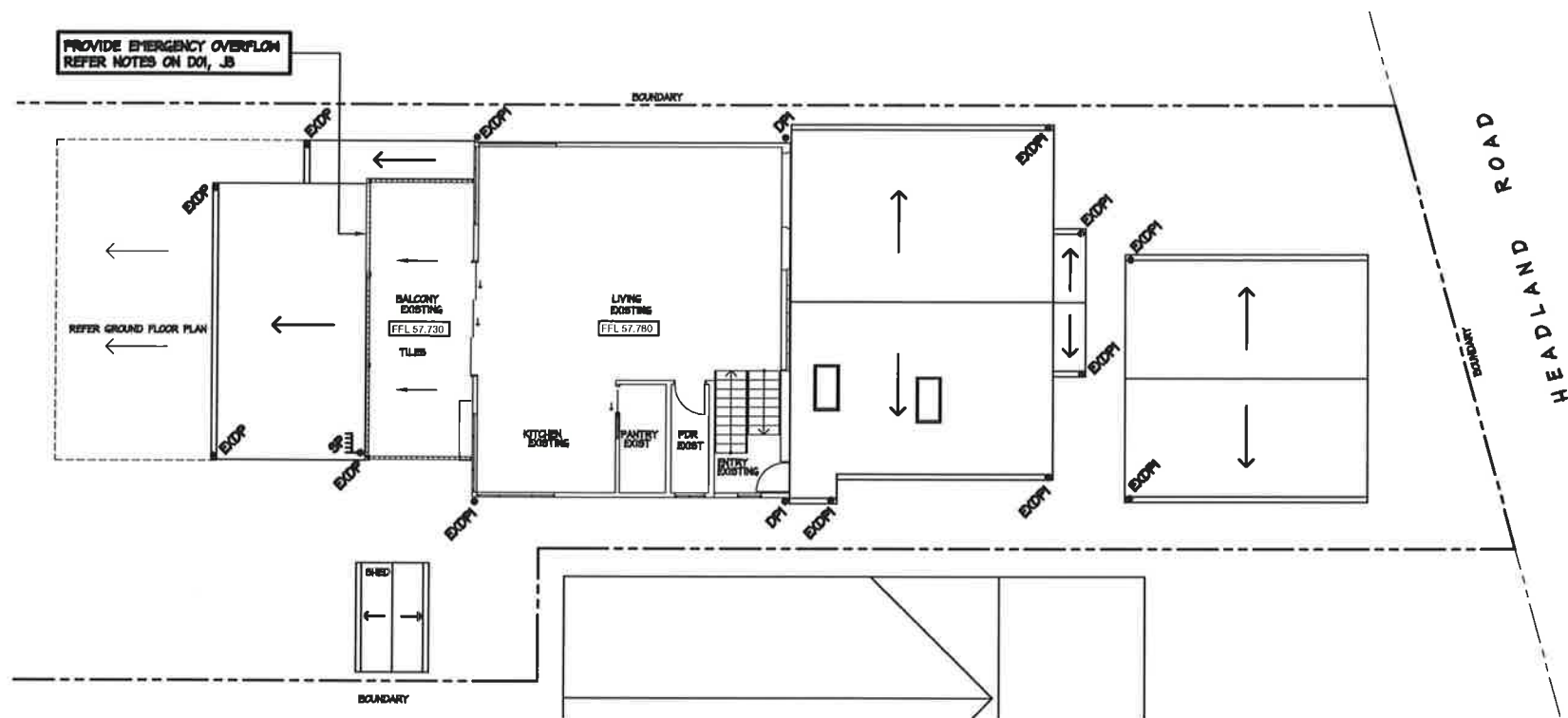
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Architect:	<b>ACTION PLANS</b>	Project:	<b>ALTERATIONS AND ADDITIONS 205 HEADLAND ROAD, NORTH CURL CURL</b>	Date:	<b>FEB 2021</b>	Design:	<b>HW</b>	Drawn:	<b>MC</b>
Client:	<b>KIM AND MARCO CARLON</b>	Drawing Title:	<b>STORMWATER MANAGEMENT GENERAL NOTES AND DRAWING SCHEDULE</b>	Job No:	<b>091153</b>	Drawing No:	<b>DOI</b>	Issue:	<b>A</b>

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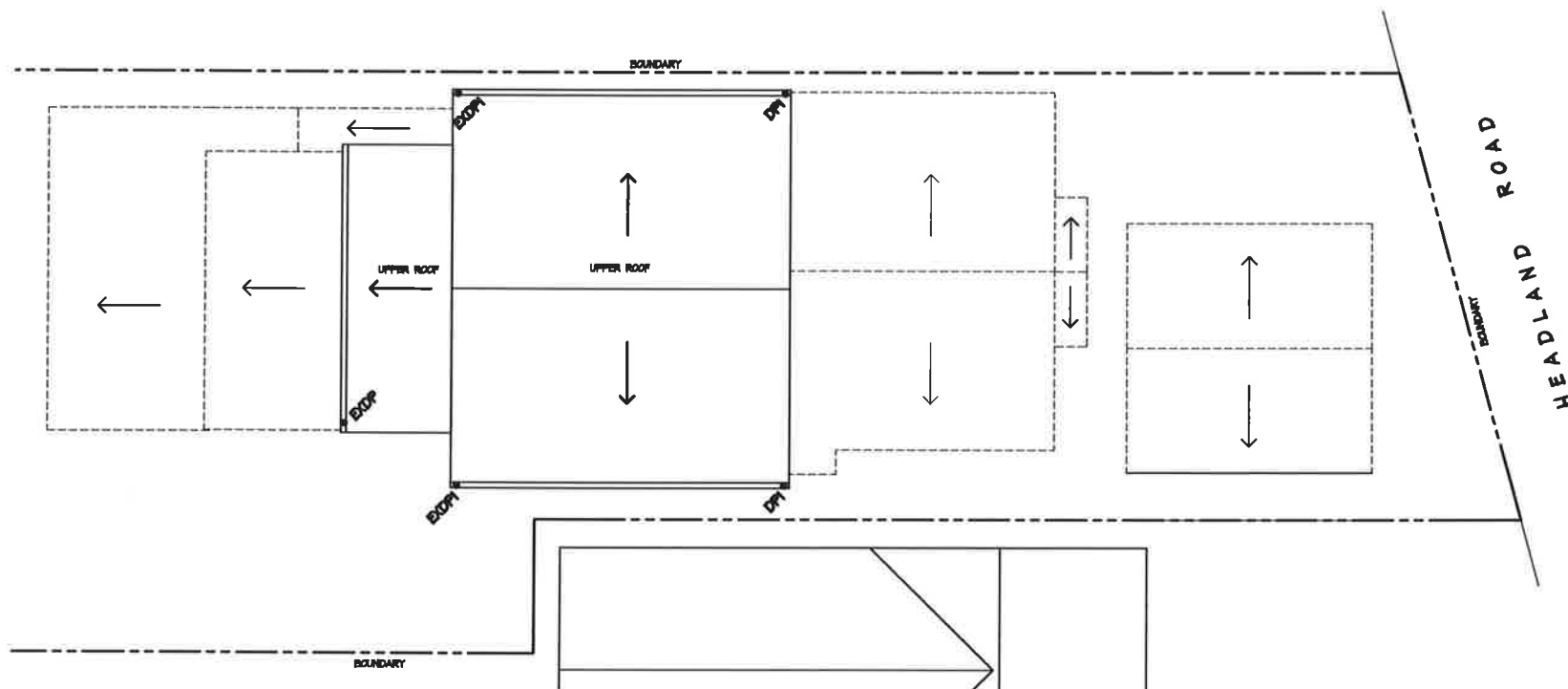






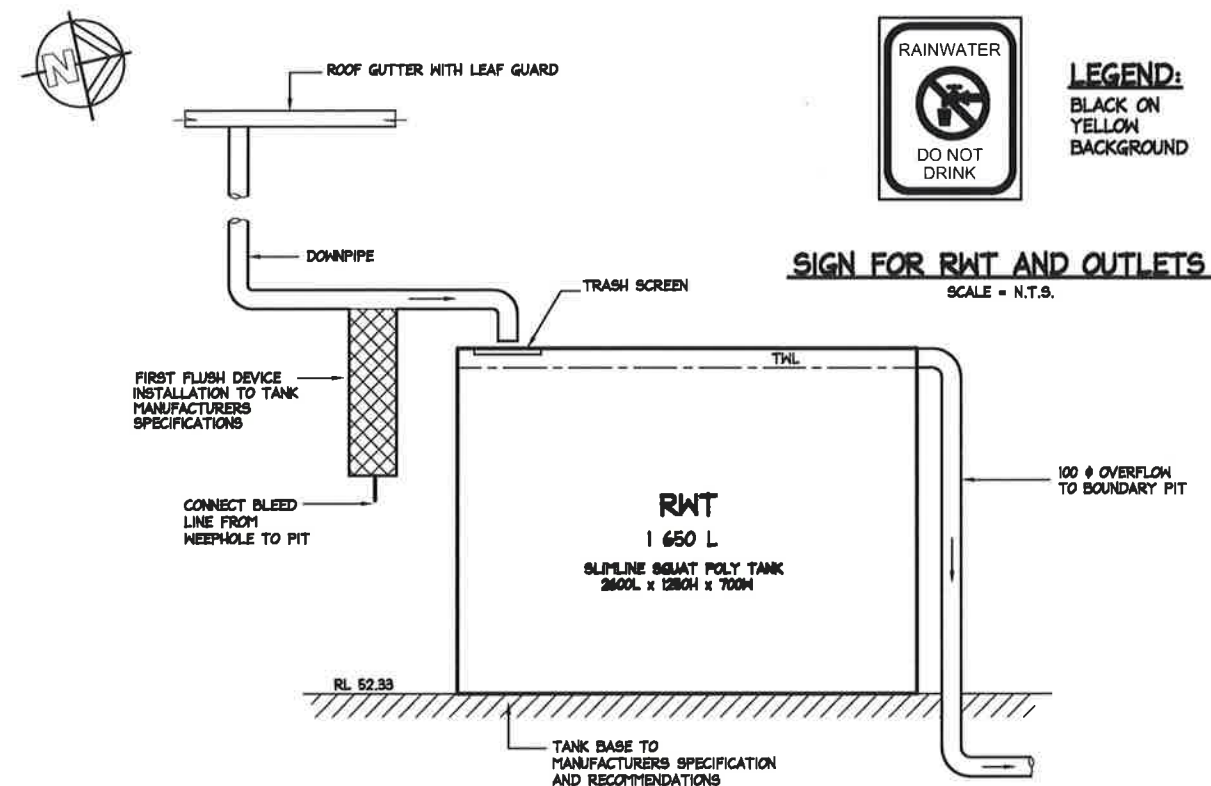
**FIRST FLOOR AND LOWER ROOF - DRAINAGE PLAN**

SCALE = 1 : 100



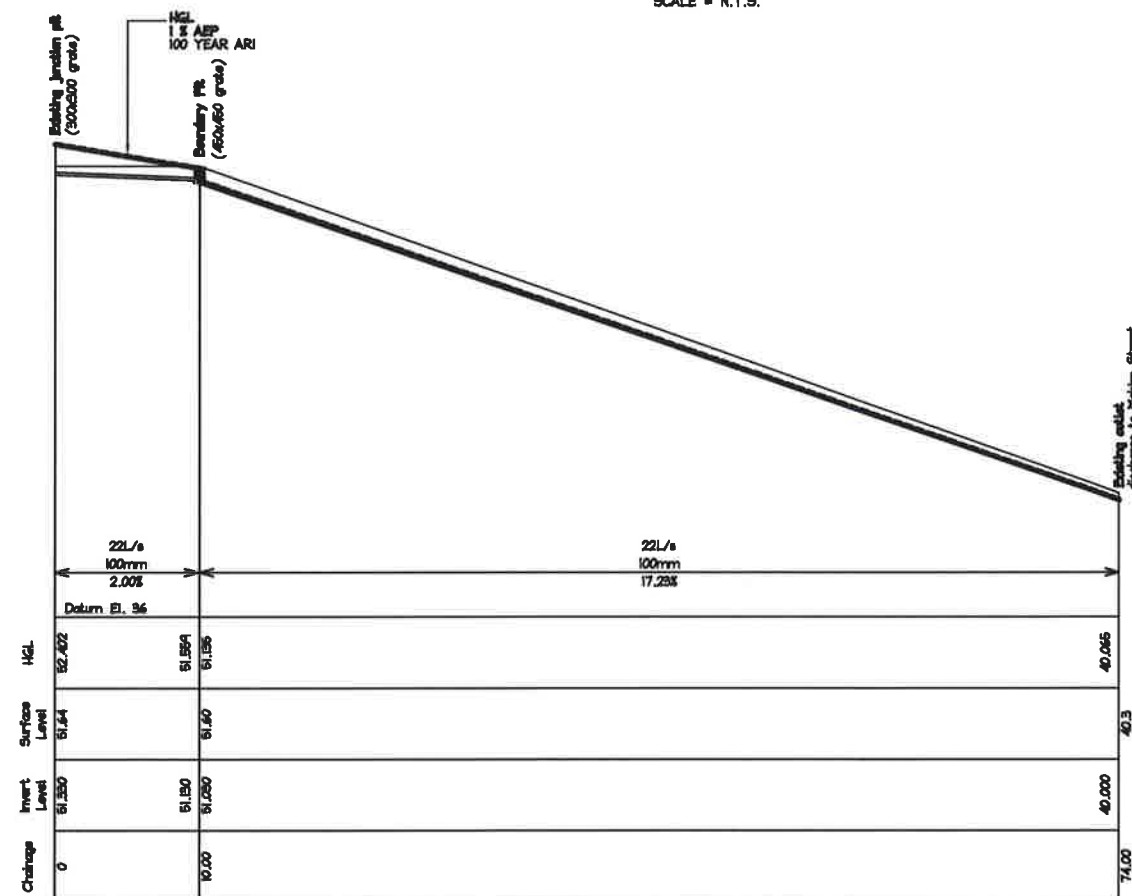
**UPPER ROOF - DRAINAGE PLAN**

SCALE = 1 : 100



**TYPICAL RAINWATER RE-USE TANK DETAIL**

SCALE = N.T.S.



**HGL - 1% AEP (100 YEAR ARI) LONGITUDINAL SECTION**

SCALE = N.T.S.

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Architect:						ACTION PLANS						Project: ALTERATIONS AND ADDITIONS 205 HEADLAND ROAD, NORTH CURL CURL		
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Date:			FEB 2021			Design:			H0			Drawn:		
Job No:			091153			Drawing No:			D03			Issue:		
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