

1. ALL PIPES TO BE 100mm ϕ 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 ϕ UNLESS NOTED OTHERWISE.
6. DOWN PIPE LOCATIONS ARE INDICATIVE ONLY. LOCATIONS TO BE CONFIRMED WITH ARCHITECT PRIOR TO COMMENCEMENT OF WORK.
7. PROVIDE CLEANING EYES AT ALL DOWNPIPES.
8. ALL FITS TO BE CAST INSITU OR, IF PRECAST, APPROVED BY ENGINEER.
CAST INSITU FITS TO HAVE 150mm THICK CONCRETE WALLS AND BASE.
WALLS TO BE REINFORCED WITH 1 N/2 TOP TO BE MINIMUM 400x600 AND
CAST INSITU FITS GREATER THAN 400 DEEP TO BE MINIMUM 400x600 AND
TO HAVE 150mm THICK CONCRETE WALLS AND BASE. WALLS TO BE
REINFORCED WITH N/2 AT 300 EACH WAY UNLESS NOTED OTHERWISE.
9. ALL FITS GREATER THAN 1000mm DEEP SHALL HAVE STEP IRONS
AS PER COUNCIL STANDARDS.
10. THE BOUNDARY OR SILT ARRESTOR PIT SHOULD ALWAYS INCORPORATE
A SUMP AND MAXI-MESH SCREEN AS PER LOCAL COUNCIL REQUIREMENTS.
HOWEVER, UNLESS SPECIFICALLY REQUIRED BY COUNCILS POLICY OR IF THE
SITE CONSISTS OF A CLAY OR ROCK SUBGRADE, ALL OTHER DRAINAGE FITS
WILL NOT REQUIRE A SUMP.
11. ALL WORK TO BE IN ACCORDANCE WITH LOCAL COUNCIL STANDARDS
AND SPECIFICATIONS.
12. 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.
13. ALL LEVELS SHOWN ARE TO AHD
14. ENSURE THAT ALL FITS AND STORMWATER PIPES ARE LOCATED CLEAR
FROM TREE ROOT SYSTEMS.
15. ALL EXISTING EARTHENWARE PIPES TO BE UPGRADED TO UPVC.
16. ALL TO BE IN ACCORDANCE WITH AS 3500-2003 NATIONAL
PLUMBING DRAINAGE CODE PART 8 - STORMWATER DRAINAGE
17. UNLESS NOTED OTHERWISE, SUB-SOIL DRAINS ARE TO BE INSTALLED IN
ACCORDANCE WITH AS3500.3 ALONG-LENGTH 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.
18. IF NOT INDICATED ON PLANS, PROVIDE LEAF CATCHERS TO ALL DOWNPIPES
OR GUTTER GUARD TO ALL EAVES GUTTERS.
19. ORIFICE PLATE MUST BE INSTALLED PRIOR TO INSTALLATION OF THE ROOF
DRAINAGE SYSTEM AND CONNECTION OF THE SITE STORMWATER SYSTEM TO
THE ONSITE DETENTION TANK.
20. 100mm ϕ x 3000 LONG TAIL OUT SUBSOIL LINE TO BE PROVIDED ON THE
UPSTREAM SIDE OF ALL FITS. SUBSOIL LINE TO BE COVERED WITH
GEOTEXTILE FILTER SOCK FOR THE FULL LENGTH AND END COVERED.

NOTE:
EXISTING SURFACE DRAINAGE TO BE INSPECTED
BY THE BUILDER PRIOR TO CONSTRUCTION AND
UPGRADED AS REQUIRED IN ACCORDANCE
WITH AS3500.3.

NOTE: SUBSOIL DRAINAGE
SUBSOIL DRAINAGE TO BE INSTALLED
WHERE REQUIRED AS PER AS 3500.3

3. CONSIDERING THE ROOF CATCHMENT AREA, LOCATION OF PROPERTY, INTENDED USE OF RAINWATER AND GARDEN SIZE WE RECOMMEND PROVIDING A RAINWATER TANK DESIGN FOR USE AS PER BASIX REQUIREMENTS, SYDNEY WATER AND NSW HEALTH REQUIREMENTS FOR NON DRINKING USE ONLY AS FOLLOWS:
 - a) TO WATER GARDEN AREAS b) WASHING CARS c) FILLING SWIMMING POOLS & SPAS.
2. THE TANKS PROVIDED WILL REDUCE PRESSURE ON COUNCIL'S STORMWATER INFRASTRUCTURE.
3. REFERENCES:

COOMBS P.J. & KUCZERA G. (2001), 'RAINWATER TANK DESIGN FOR WATER SUPPLY & STORMWATER MANAGEMENT.' STORMWATER INDUSTRY ASSOCIATION REGIONAL CONFERENCE.

PATRICK DUPONT & STEVE SHACKEL, 'RAINWATER'
AUSTRALIAN GOVERNMENT (2004), 'GUIDANCE ON USE OF RAINWATER TANKS'
4. ALL CONNECTIONS TO PLUMBING AND RAINWATER TANKS TO BE IN ACCORDANCE WITH 'SYDNEY WATERS' GUIDE 'INSTALLING A RAINWATER TANK'
AVAILABLE AT www.sydneywater.com.au
5. PROVIDE A DUAL SUPPLY SYSTEM AND BACKFLOW PREVENTION SYSTEM IN ACCORDANCE WITH 'BASIX-DRAINAGE GUIDE FOR SINGLE DWELLINGS' BY NSW DEPARTMENT OF INFRASTRUCTURE, PLANNING AND NATURAL RESOURCES.
6. 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.
7. 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.
8. 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.
9. 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.
10. 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.
11. 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 230-2008. IF IN DOUBT CONTACT ENGINEER.
12. RAINWATER TANK TO BE WATER PROOFED IN ACCORDANCE WITH HB 230-2008.

ADDRESS: 14 ERNEST ST, BALGOWLAH HEIGHTS

SITE DETAILS

TOTAL SITE AREA	875.3 m ²
PRE DEVELOPMENT IMPERVIOUS AREA	450 m ² (51% IMPERVIOUS)
POST DEVELOPMENT IMPERVIOUS AREA	450 m ² (51% IMPERVIOUS)
INCREASE	0 m ²

OSD REQUIREMENT

SINCE THE TOTAL IMPERVIOUS AREA FOR THE SITE IS LESS THAN 60% AND THE INCREASE IN IMPERVIOUS AREA DOES NOT EXCEED 50m², OSD IS NOT REQUIRED.

PERMITTED SITE DISCHARGE

PSD	25 l/s
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SITE STORAGE REQUIREMENT

OSD VOLUME REQUIRED	NIL.
RAINWATER 'BASIX' REQUIRED	2.843 m ³ PROVIDED (Min.)

OUTLET CONTROL

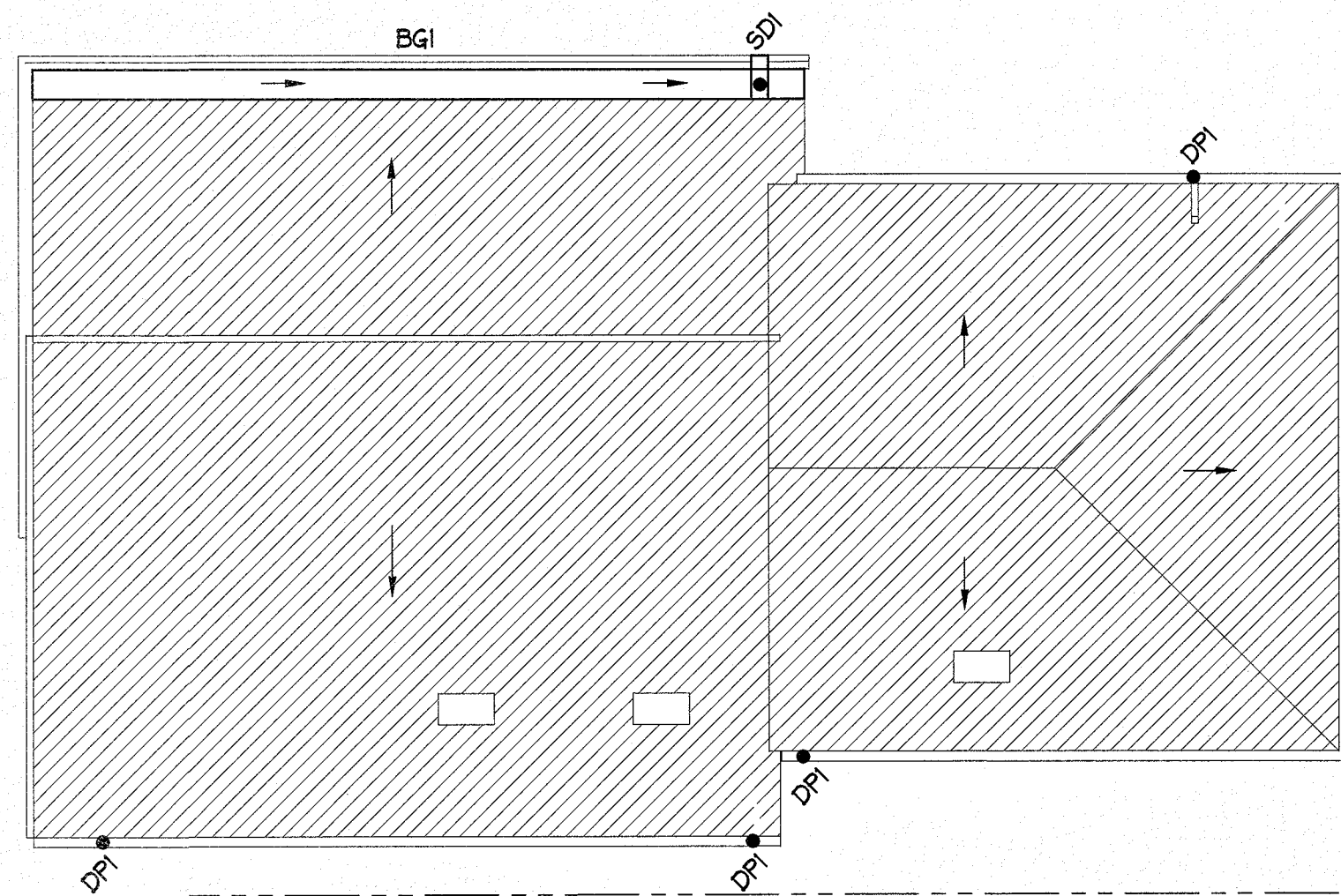
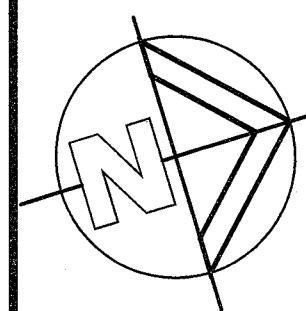
METHOD OF DISCHARGE	CONNECTION TO CHANNEL WITHIN DRAINAGE EASEMENT
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NOTE: ALL DRAINAGE LINE LOCATIONS ARE INDICATIVE ONLY.
LOCATION MAY VARY DUE TO CONSTRAINTS.

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

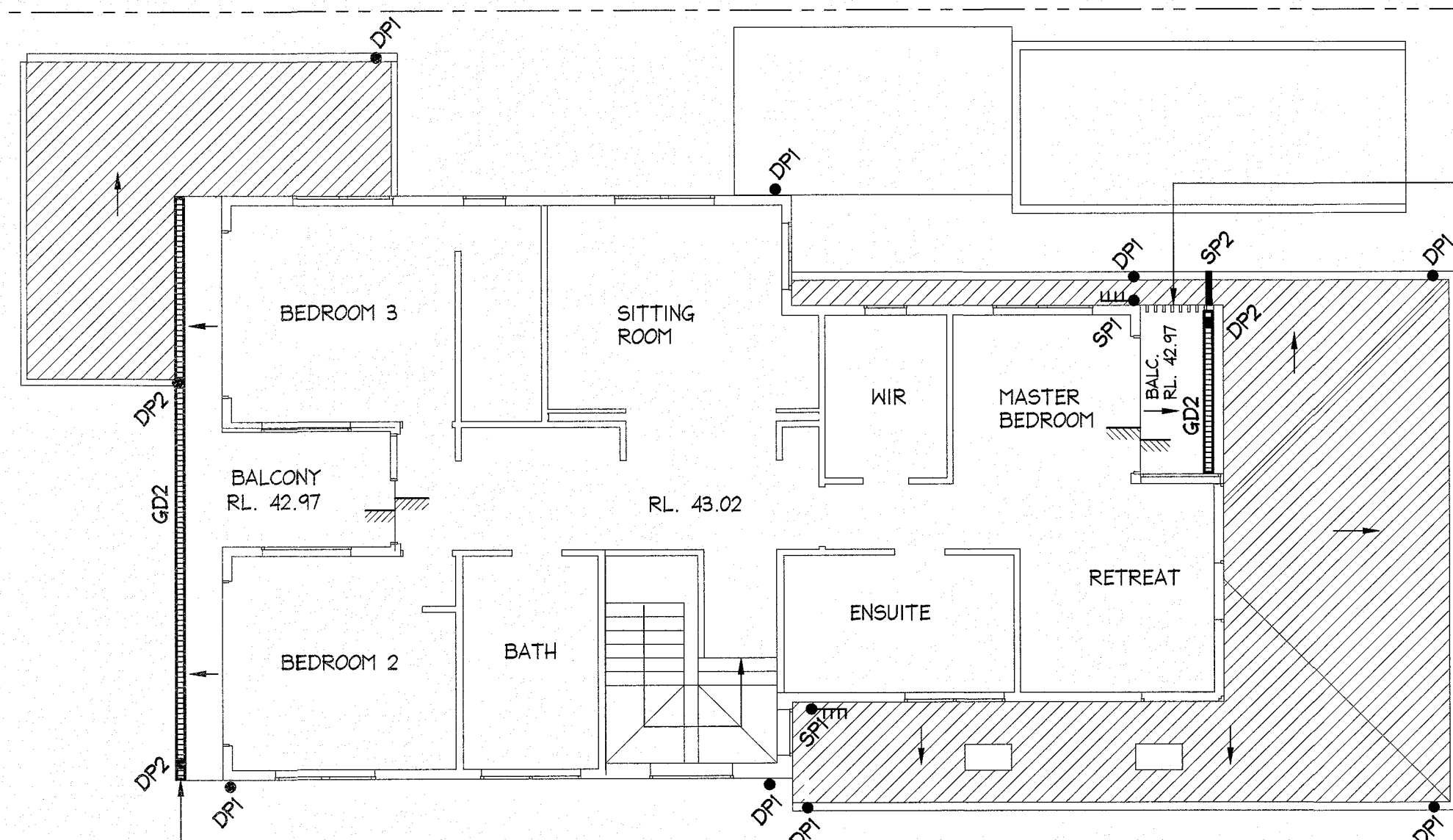
IF IN DOUBT ASK

VB Consulting Engineers



ROOF DRAINAGE PLAN
SCALE = 1:100

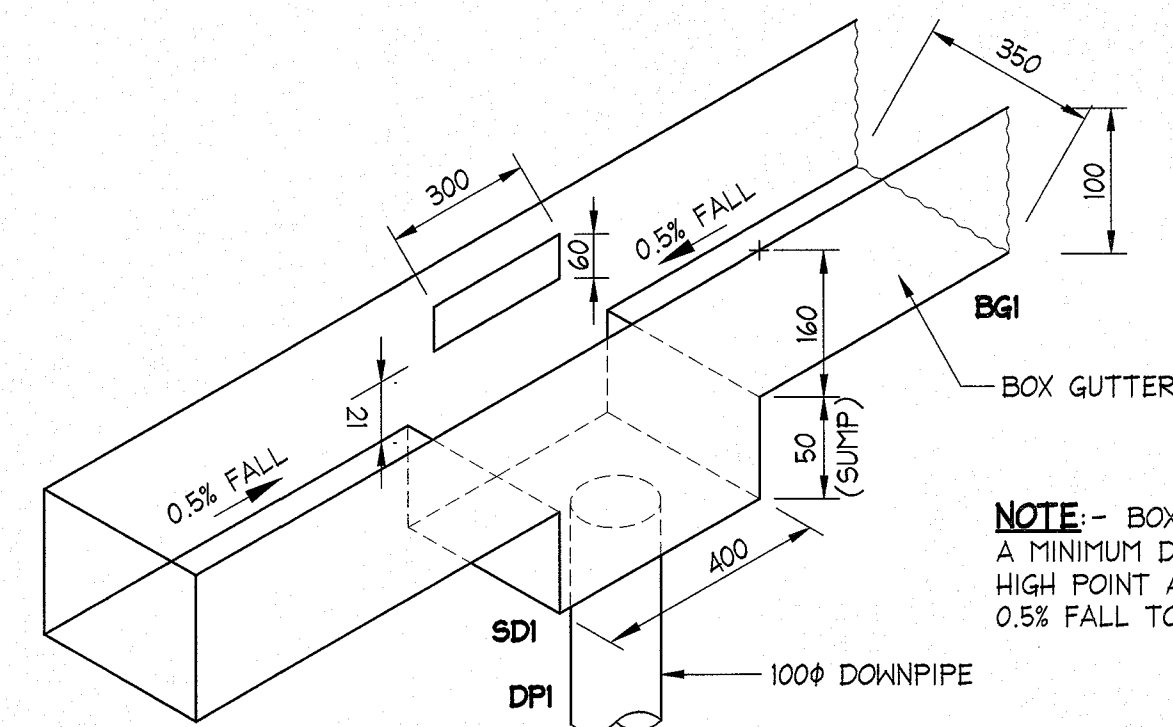
HATCHED AREA DENOTES NEW ROOF



FIRST FLOOR DRAINAGE PLAN
SCALE = 1:100

HATCHED AREA DENOTES NEW ROOF

NOTE:
BUILDER TO PROVIDE A MINIMUM 100mm W x 30mm H OR 50mm DIA OVERFLOW FOR EVERY 6m² OF EXPOSED TERRACE AREA. THE FULL OVERFLOW DEPTH MUST BE LOCATED BELOW THE ADJACENT INTERNAL FLOOR LEVEL TO PROTECT AGAINST INCIDENTAL FLOODING DUE TO A BLOCKED FLOOR OUTLET.



NOTE: - BOX GUTTER TO HAVE A MINIMUM DEPTH OF 100mm AT HIGH POINT AND TO HAVE A MIN. 0.5% FALL TO SUMP

BOX GUTTER 'BG1' & SUMP 'SD1' DETAIL
SCALE = NTS

LEGEND

- DPI • 100mm ϕ DOWNPIPE TO DISCHARGE TO RWT
- DPI • 100mm ϕ DOWNPIPE TO BYPASS RWT
- SD1 SUMP WITH 100mm ϕ DOWNPIPE DISCHARGE TO RWT
- BG1 BOX GUTTER, REFER TO DETAILS
- SP1 100mm ϕ DOWNPIPE WITH A SPREADER PIPE
- SP2 50mm DIA EMERGENCY OVERFLOW SPITTER TO HAVE AN OPEN DISCHARGE POINT BEYOND ROOF.
- GD1 GRATED DRAIN
GD1 - 150 MIN DEPTH x 150 WIDE GRATED DRAIN
GD2 - 100 x 100 GRATED DRAIN (ACO DRAIN OR EQUIVALENT)

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

NOTES:

1. THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION IF THE ISSUE DATE PRECEDES THE ISSUE DATE ON THE ARCHITECTURAL DRAWINGS.
2. DO NOT SCALE FROM THIS DRAWING.
3. ALL DIMENSIONS ARE TO BE VERIFIED ON SITE BY THE BUILDER BEFORE COMMENCING WITH ASSOCIATED WORK.
4. FOR GENERAL NOTES REFER TO DRAWING NUMBER: S01.

Scale check - 100mm when printed to scale

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ISSUED FOR D.A.
SUBMISSION ONLY
NOT FOR
CONSTRUCTION

IF IN DOUBT ASK

NB Consulting Engineers