

PROPOSED RESIDENTIAL DWELLING AT 12 LINCOLN AVENUE, COLLAROY NSW 2097

CONCEPT STORMWATER DESIGN PLANS

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LEGEND

| | |
|--|--|
| | STORMWATER LINE |
| | SUBSOIL LINE |
| | STORMWATER RISING MAIN |
| | EXISTING STORMWATER LINE |
| | AUTHORITY STORMWATER LINE |
| | AUTHORITY SEWER LINE |
| | AUTHORITY WATER LINE |
| | AUTHORITY GAS LINE |
| | AUTHORITY ELECTRICITY LINE |
| | AUTHORITY UNDERGROUND ELECTRICITY LINE |
| | AUTHORITY FIBRE OPTIC LINE |
| | AUTHORITY COMMS LINE |
| | FENCE LINE |
| | GRATED SURFACE INLET PIT |
| | GRATED SURFACE INLET PIT WITH ENVIROPOD INSERT |
| | JUNCTION PIT |
| | KERB INLET PIT |
| | EXISTING GRATED SURFACE INLET PIT |
| | GRATED TRENCH DRAIN |
| | EXISTING JUNCTION PIT |
| | EXISTING KERB INLET PIT |
| | EXISTING TELSTRA PIT |
| | EXISTING HYDRANT |
| | EXISTING STOP VALVE |
| | EXISTING GAS VALVE |
| | EXISTING POWER POLE |
| | EXISTING BOUNDARY TRAP |

SERVICES SHOWN ON PLAN ARE INDICATIVE, EXACT DEPTH AND LOCATION TO BE CONFIRMED ONSITE. CONTRACTOR TO CARRY OUT DIAL BEFORE YOU DIG APPLICATION AND ENGAGE A REGISTERED SURVEYOR TO PEG OUT ALL EXISTING SERVICES PRIOR TO ANY WORK COMMENCING ONSITE.

LEGEND

| | |
|--|------------------------|
| | EXISTING SEWER MANHOLE |
| | OVERLAND FLOW PATH |
| | RAINWATER OUTLET |
| | CLEAR OUT POINT |
| | DISH DRAIN OUTLET |
| | PLANTER DRAIN |
| | CAPPING |
| | PIT TAG/NUMBER |
| | RAINHEAD |
| | DOWNPIPE DROP |
| | NON RETURN VALVE |
| | WALL PENETRATION |
| | DOWNPIPE |
| | DOWNPIPE + SPREADER |
| | WARNING LIGHT |
| | SPOT LEVELS |
| | BENCHMARK |

ABBREVIATIONS:

| | |
|----------|----------------------------------|
| Ø or DIA | DIAMETER |
| CBR | CALIFORNIA BEARING RATIO |
| CH | CHAINAGE |
| CL | CENTER LINE |
| CO | CLEAR OUT |
| DD | DISH DRAIN |
| DDO | DISH DRAIN OUTLET |
| DEJ | DOWELLED EXPANSION JOINT |
| DGB | DENSE GRADED BASECOURSE |
| DGS | DENSE GRADED SUB-BASE |
| DP | DOWNPIPE |
| e | EXISTING |
| FFL | FINISHED FLOOR LEVEL |
| GTD | GRATED TRENCH DRAIN |
| GSP | GRATED SURFACE INLET PIT |
| HYD | HYDRANT |
| IJ | ISOLATING JOINT |
| IK | INTEGRAL KERB |
| IL | INVERT LEVEL |
| IP | INTERSECTION POINT |
| KIP | KERB INLET PIT |
| KO | KERB ONLY |
| K&G | KERB & GUTTER |
| KR | KERB RETURN |
| LS | LONGITUDINAL SECTION |
| NGL | NATURAL GROUND LEVEL |
| OFP | OVERLAND FLOW PATH |
| OSD | ON-SITE DETENTION |
| R | RADIUS |
| RCP | REINFORCED CONCRETE PIPE |
| RK | ROLL KERB & GUTTER |
| RL | REDUCED LEVEL |
| RW | RETAINING WALL |
| RWT | RAINWATER TANK |
| SJ | SAWN CONTROL JOINT |
| SMH | SEWER MAN HOLE |
| SW | STORMWATER |
| SWP | STORMWATER PIT |
| SWRM | STORMWATER RISING MAIN |
| SWS | STORMWATER SUMP |
| SV | STOP VALVE |
| TOK | TOP OF KERB |
| TOW | TOP OF WALL |
| TWL | TOP WATER LEVEL |
| TP | TANGENT POINT |
| UPVC | UNPLASTICISED POLYVINYL CHLORIDE |
| UNO | UNLESS NOTED OTHERWISE |
| WPJ | WEAKENED PLANE JOINT |
| FF | FIRST FLUSH DEVICE |
| TYP | TYPICAL |

DRAINAGE NOTES:

ALL PIPES TO BE LAID ON 75mm SAND BED WITH THE BARRELS FULLY SUPPORTED

100mm AND 150mm DIAMETER PIPES TO BE LAID ON MINIMUM 1% GRADE

MINIMUM DEPTH OF COVER FOR PIPES NOT SUBJECT TO VEHICULAR LOADING TO BE 300mm

ALL DRAINAGE PIPES LAID UNDER PAVEMENT SHALL BE REINFORCED CONCRETE WITH RUBBER RING JOINTS

BACKFILL TRENCHES WITH COMPACTED SAND OR APPROVED AGGREGATE MATERIAL

ALL PITS TO HAVE 600x600mm INTERNAL DIMENSIONS (U.N.O.)

SILT ARRESTORS TO HAVE 900x900mm INTERNAL DIMENSIONS

HEAVY DUTY GRATES AND COVERS ARE TO BE PROVIDED IN TRAFFICABLE AREAS

PIT GRATE TO BE TYPE WELDLOK OR APPROVED EQUIVALENT

ALL PITS SHALL BE PROVIDED WITH A LOCKING CLIP

ALL PITS SHALL BE MAINTAINED REGULARLY

TOP OF BENCHING SHALL BE TO THE HALF OF THE OUTLET PIPE DIAMETER

MAXIMUM FRONT ENTRY PIPE:-
STRAIGHT ENTRY - Ø750
SKEW ENTRY 45° - Ø525

Ø100 SUBSOIL DRAINAGE PIPE 3000mm LONG WRAPPED IN FABRIC SOCK TO BE PROVIDED ADJACENT TO INLET PIPES

COMPRESSIVE STRENGTH f_c FOR CAST IN SITU CONCRETE TO BE A MINIMUM OF 20MPa AT 28 DAYS

PROVIDE CLEANING EYES TO ALL DOWNPIPES NOT DIRECTLY CONNECTED TO PITS

ISOLATED JOINTS TO BE PROVIDED TO ISOLATE CONCRETE PAVEMENTS FROM PITS

ALL TRENCH GRATES PROVIDED SHALL HAVE A MINIMUM CLEAR WIDTH OF 200mm

STORMWATER DRAINAGE CONNECTIONS TO THE MAIN SYSTEM SHALL BE TO THE REQUIREMENTS AND THE SATISFACTION OF LOCAL COUNCIL

STORMWATER PIPE BEDDING/PAVING NOTES:

WHERE TRENCH BASE IS ROCK A MINIMUM OF 75mm BEDDING TO BE PROVIDED UNDER PIPE COLLARS.

STORMWATER PIPE BEDDING DETAIL TO BE IN ACCORDANCE WITH LOCAL COUNCIL REQUIREMENTS. BEDDING DETAILS TO BE CONFIRMED UPON EXCAVATION & PRIOR TO INSTALLATION OF PIPEWORK.

FOOTPATH REINSTATEMENT NOTES:

REMOVE ALL SAND FILL WITHIN THE FOOTPATH AREA TO THE EXISTING SUBGRADE.

SUPPORT ALL AUTHORITY SERVICES TO STRUCTURAL ENGINEERS DETAILS DURING EXCAVATION.

REINSTATE FOOTPATH SUBGRADE.

THE CONTRACTOR SHALL PROVIDE CERTIFICATION OF COMPACTION FROM A NATA REGISTERED TESTING AUTHORITY. MINIMUM THREE TESTS PER LAYER AS FOLLOWS:
SELECT FILL (LESS THAN 300mm BELOW BASE COURSE) 95% MODIFIED
SELECT FILL (LESS THAN 300mm BELOW BASE COURSE) 98% MODIFIED
BASE COURSE 100% MODIFIED

EROSION & SEDIMENT CONTROL NOTES:

PROVIDE SILT FENCE/HAY BAIL BARRIERS TO THE LOW SIDE OF ALL EXPOSED EARTH EXCAVATIONS (TYPICAL).

ISOLATE EXISTING STORMWATER PITS WITH HAY BALES TO FILTER ALL INCOMING FLOWS.

DO NOT STOCK PILE EXCAVATED MATERIAL ON THE ROAD WAY.

SURVEY

THE EXISTING SITE CONDITIONS SHOWN ON THE FOLLOWING DRAWINGS HAVE BEEN INVESTIGATED BY OTHERS.

THE INFORMATION IS SHOWN TO PROVIDE A BASIS FOR DESIGN.

GEBA CONSULTING DOES NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE SURVEY BASE OR ITS SUITABILITY AS A BASIS FOR CONSTRUCTION.

SHOULD DISCREPANCIES BE ENCOUNTERED DURING CONSTRUCTION BETWEEN THE SURVEY DATA AND ACTUAL FIELD DATA, CONTACT GEBA CONSULTING.

ADOPT LEVELS AS PER ORIGINAL SURVEY PLAN.

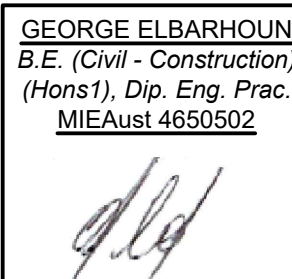
DRAWING REGISTER

| NUMBER | NAME | REVISION |
|--------|------------------------------|----------|
| SW01 | COVER SHEET & SPECIFICATIONS | B |
| SW02 | BASEMENT STORMWATER PLAN | B |
| SW03 | GROUND FLOOR STORMWATER PLAN | B |
| SW04 | CATCHMENT PLAN | B |
| SW05 | DETAILS SHEET 1 | B |
| SW06 | DETAILS SHEET 2 | B |



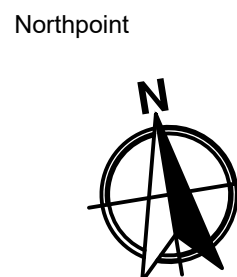
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ARC M DESIGN
Project
PROPOSED RESIDENTIAL DWELLING
Address
12 LINCOLN AVENUE, COLLAROY NSW 2097

Scale
0m 1 2 3 4 5
SCALE 1:100 ON ORIGINAL SIZE



Description
FOR APPROVAL
FOR APPROVAL

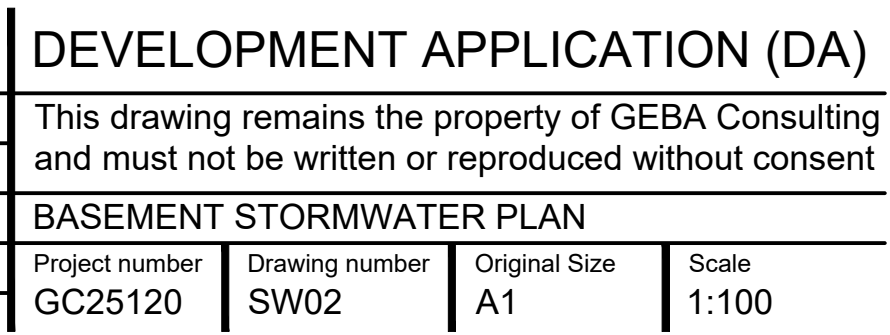
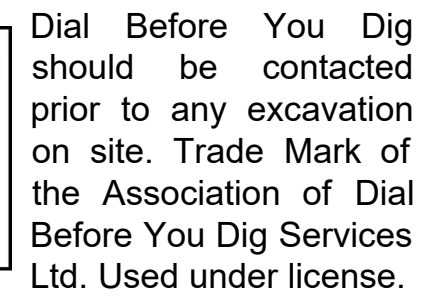
Des. A.M. Chk. E.Z. App. E.Z. Rev. A Date 12.05.25

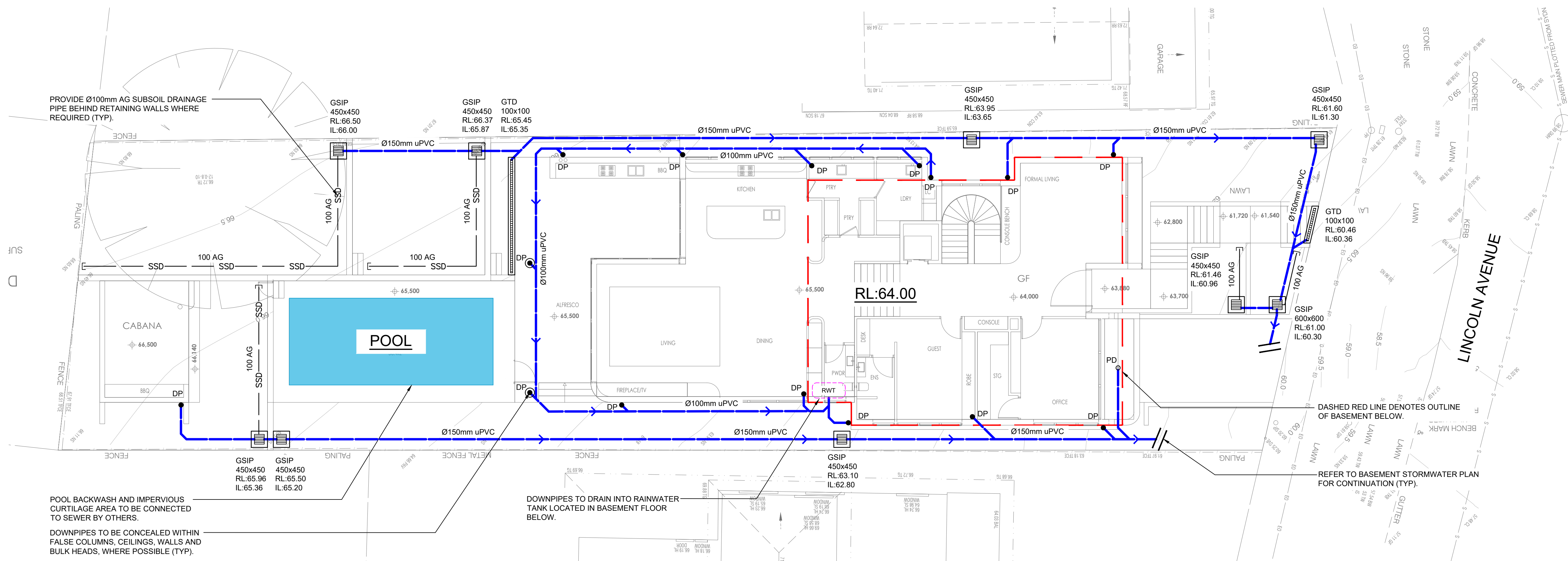
DEVELOPMENT APPLICATION (DA)

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COVER SHEET & SPECIFICATIONS

Project number GC25120 Drawing number SW01 Original Size A1 Scale 1:100





DESIGN NOTES:

THE SITE IS LOCATED IN NORTHERN BEACHES COUNCIL.

THE DEVELOPMENT PROPOSAL IS FOR A RESIDENTIAL DWELLING.

SITE AREA = 819.10m².

POST-DEVELOPMENT IMPERVIOUS AREA = 545.20m².
POST-DEVELOPMENT IMPERVIOUS AREA% = 66.56%.

SITE IS LOCATED WITHIN THE SOUTHERN STORMWATER REGION (REGION 2). OSD IS REQUIRED FOR THE PROPOSED DEVELOPMENT, AS PER SECTION 9.3.3.2 OF NORTHERN BEACHES WATER MANAGEMENT POLICY. SINCE THE POST DEVELOPMENT IMPERVIOUS AREA PERCENTAGE IS MORE THAN 40% OF THE SITE.

OSD'S FOR THE SITE WILL BE BELOW GROUND.

OSD CALCULATION PARAMETERS:

THE STORAGE CAPACITY AND PERMISSIBLE SITE DISCHARGE OF THE OSD WAS CALCULATED WITH REGARDS TO NORTHERN BEACHES COUNCIL REQUIREMENTS LISTED BELOW;

ALL STORM EVENTS UP TO AND INCLUDING THE 1% AEP RESTRICTED TO 400 L/S PER HECTARE AND MINIMUM SITE STORAGE REQUIRED IS 200m³ PER HECTARE AS PER SECTION 9.3.2.3 TABLE 8.

MINIMUM OSD SITE STORAGE REQUIRED = 200 x 819.10/10000
= 16.39m³.

MAXIMUM PSD REQUIRED = 400 x 819.10/10000
= 32.76 L/s.

ALL STORMWATER PIPES SHOWN ON PLAN ARE Ø100mm uPVC AND SLOPING AT 1.0% U.N.O.

EXISTING SERVICES SHOWN ON PLAN ARE INDICATIVE ONLY. CONTRACTOR TO CONFIRM EXACT SIZE, LOCATION AND DEPTH PRIOR TO COMMENCING ANY WORKS.

CONTACT STORMWATER ENGINEER IF ANY CLASHES WITH EXISTING SERVICES ARE FOUND DURING CONSTRUCTION.



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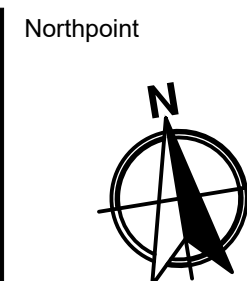
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GEORGE ELBARHOUN
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Signature

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Architect
ARC M DESIGN
Project
PROPOSED RESIDENTIAL DWELLING
Address
12 LINCOLN AVENUE, COLLAROY NSW 2097

Scale
0m 1 2 3 4 5
SCALE 1:100 ON ORIGINAL SIZE



Description
FOR APPROVAL
FOR APPROVAL

Des.
A.M.
Chk.
E.Z.
App.
E.Z.
Rev.
A
Date
12.05.25

DEVELOPMENT APPLICATION (DA)

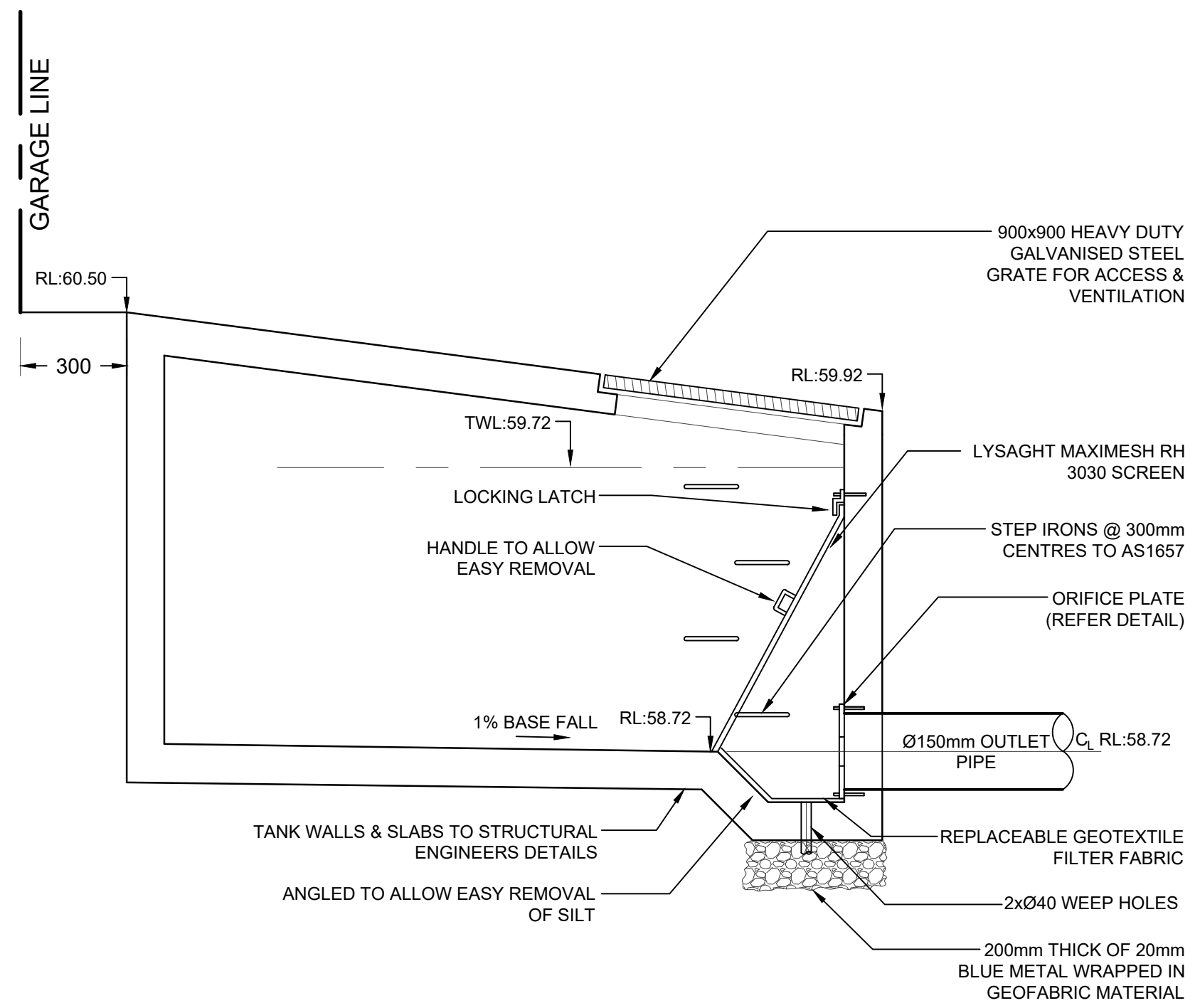
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GROUND FLOOR STORMWATER PLAN

| | | | |
|----------------|----------------|---------------|-------|
| Project number | Drawing number | Original Size | Scale |
| GC25120 | SW03 | A1 | 1:100 |



| CATCHMENT MAP | | |
|-----------------------------|-------------------|-----------|
| LEGEND | CATCHMENT AREA | AREA (m²) |
| | IMPERVIOUS TO OSD | 545.20 |
| | PERVIOUS TO OSD | 273.90 |
| TOTAL AREA IN CATCHMENT MAP | | 819.10 |



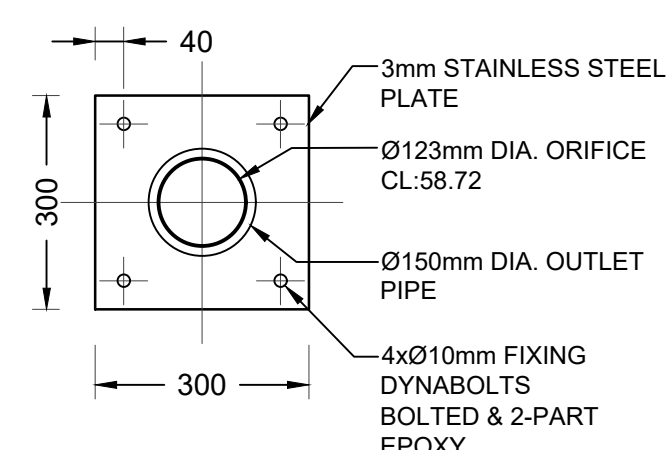
DETAIL 1
DCP-OSD
NOT TO SCALE

ORIFICE CALCULATION:

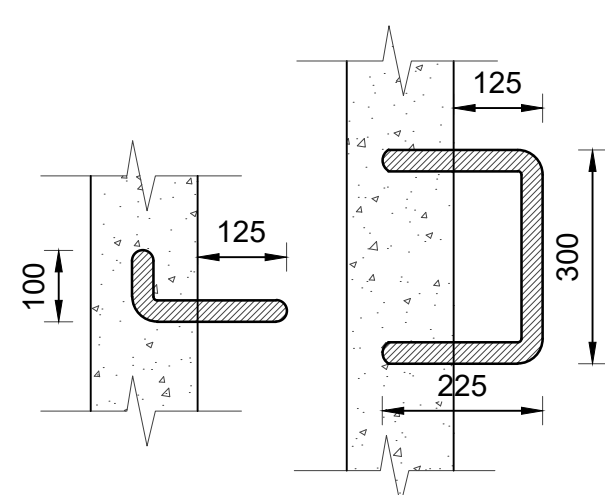
FORMULA: $d = [0.464 \times Q / (h^0.5 \rho)]^{0.5}$ WITH;

$Q = PSD = 32.76 \text{ L/s}$
 $h = 1.00 \text{ m}$

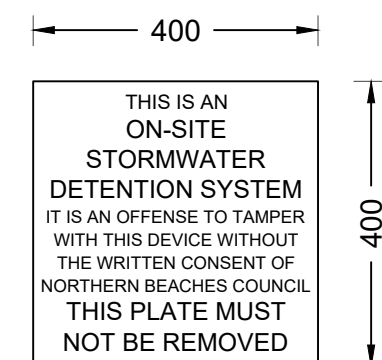
$d = 123.29 \text{ mm}$



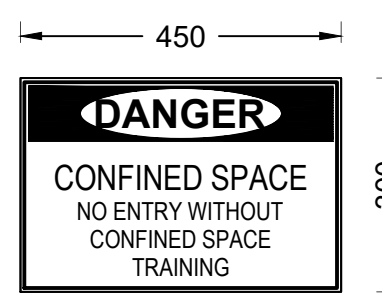
DETAIL 2
ORIFICE PLATE
OSD A
SCALE 1:20



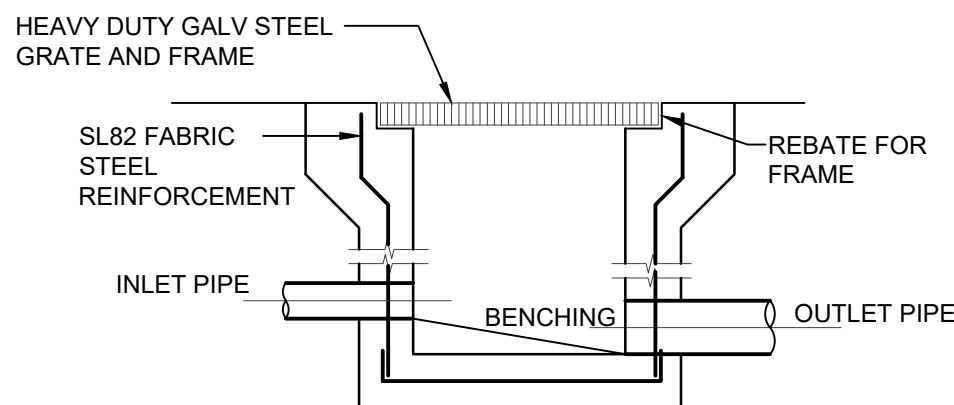
DETAIL 3
STEP IRON
SCALE 1:10



DETAIL 4
OSD SIGN
SCALE 1:10

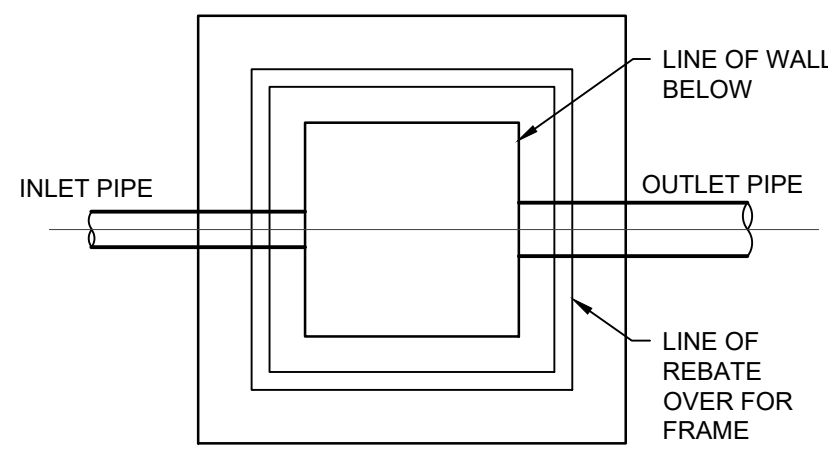


DETAIL 5
CONFINED SPACE SIGN
SCALE 1:10



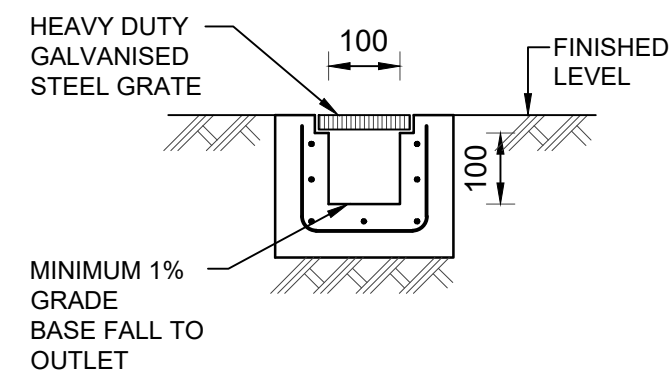
AS SHOWN ON PLAN

SECTION

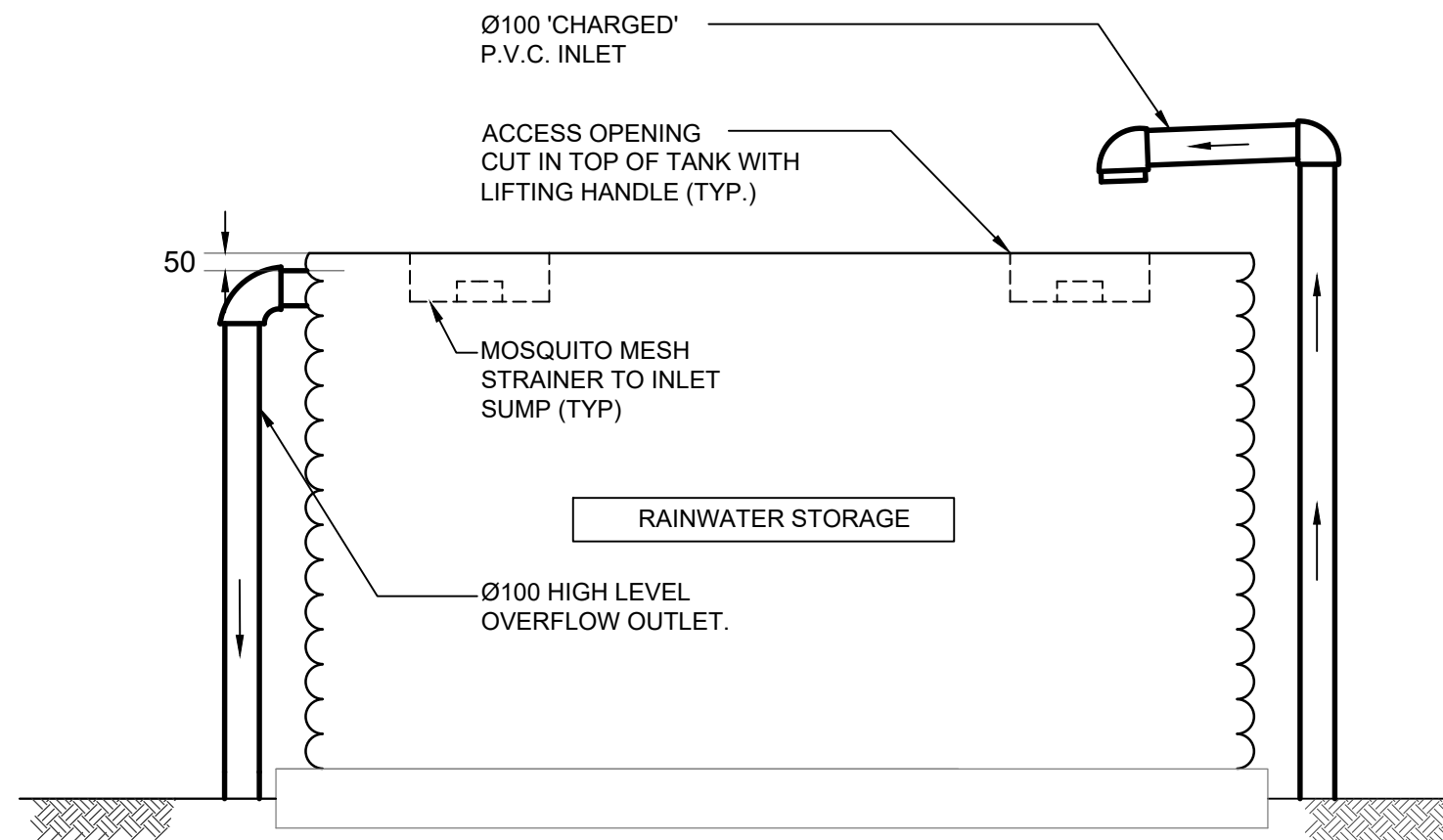


PLAN WITHOUT GRATE

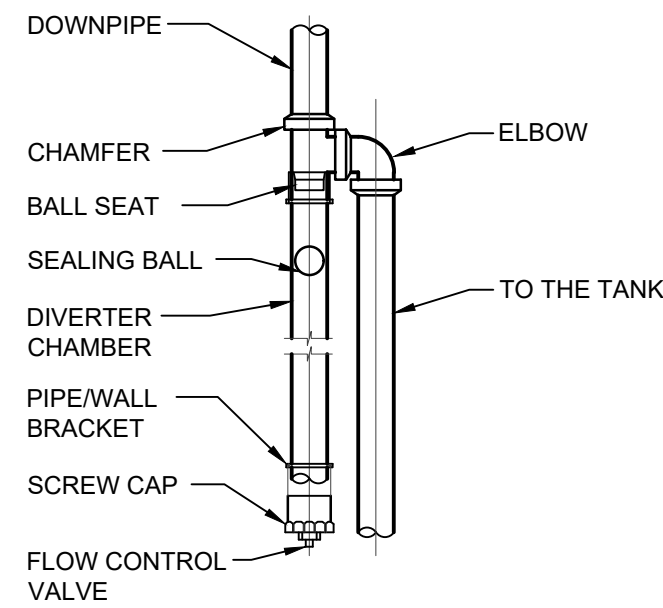
DETAIL 6
STORMWATER PIT
SCALE 1:20



DETAIL 7
GRATED TRENCH DRAIN
NOT TO SCALE



DETAIL 8
TYPICAL ABOVE GROUND
RAINWATER TANK
NOT TO SCALE

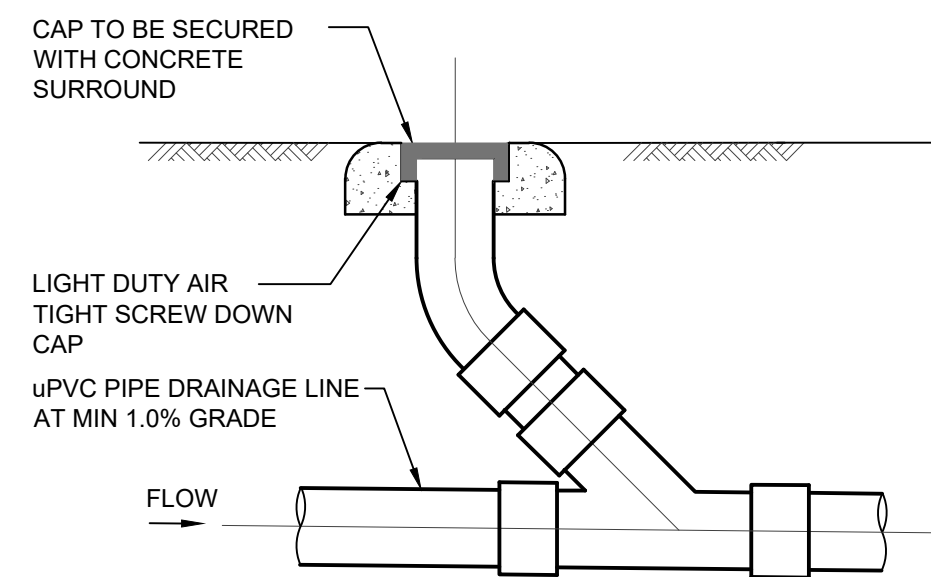


DETAIL 9
FIRST FLUSH DIVERTER
SCALE 1:20

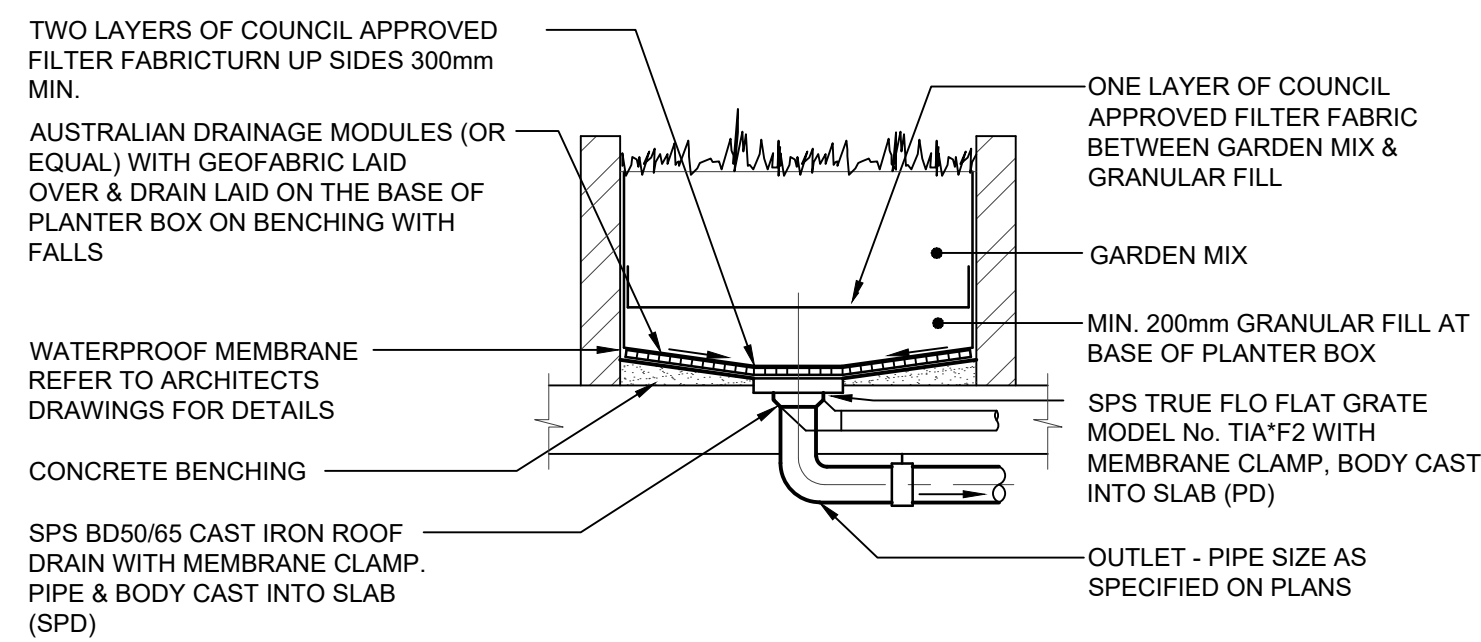


LEGEND:
BACKGROUND IS YELLOW
TEXT IS WHITE ON BLACK
BACKGROUND

DETAIL 10
RAINWATER SIGN
SCALE 1:10



DETAIL 11
CLEANING EYE
SCALE 1:20



DETAIL 12
PLANTER DRAIN
SCALE 1:20