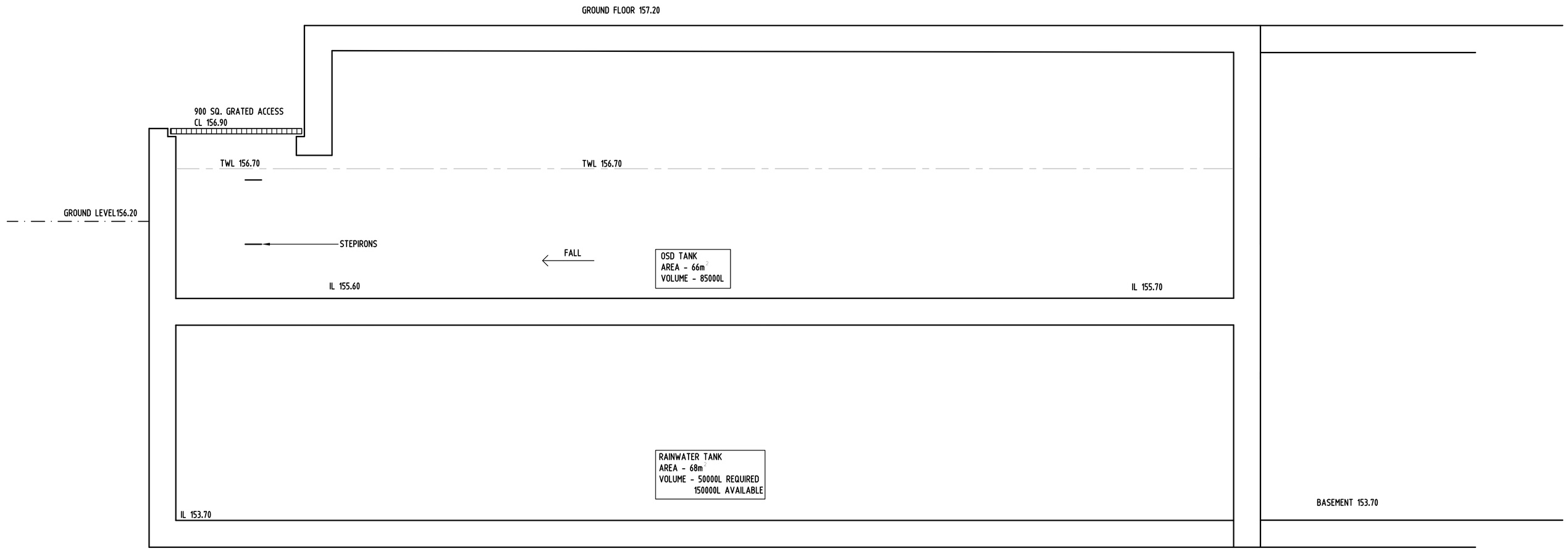
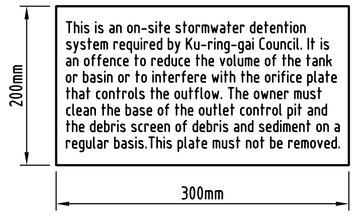
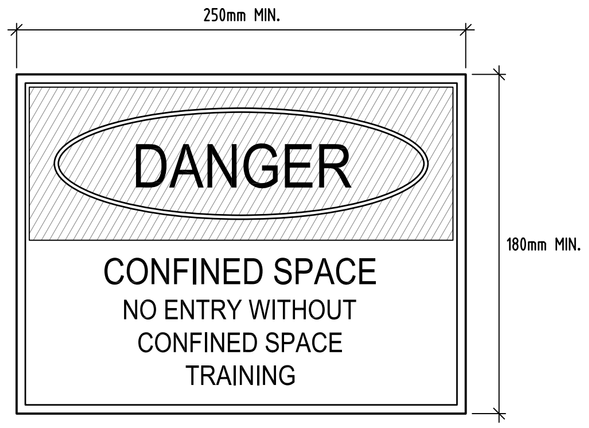


RAINWATER AND OSD TANK DETAIL (SECTION B-B) N.T.S.



OSD WARNING SIGN N.T.S.



COLOURS:

'DANGER' AND BACKGROUND	- WHITE
ELLIPTICLE AREA	- RED
RECTANGULE CONTAINING ELLIPSE	- BLACK
OTHER LETTERING AND BORDER	- BLACK

CONFINED SPACE DANGER SIGN N.T.S

1. A CONFINED SPACE DANGER SIGN SHAL BE POSITIONED IN A LOCATION AT ALL ACCESS POINTS, SUCH THAT IT IS CLEARLY VISIBLE TO PERSONS PROPOSING TO ENTER THE BELOW GROUND TANK/S CONFINED SPACE.

2. MINIMUM DIMENSIONS OF THE SIGN
   - 300mm x 450mm (LARGE ENTRIES, SUCH AS DOORS)
   - 250mm x 180mm (SMALL ENTRIES SUCH AS GRATES & MANHOLES)

3. THE SIGN SHALL BE MANUFACTURED FROM COLOUR BONDED ALUMINUM OR POLYPROPELINE.

4. SIGN SHALL BE AFIXED USING SCREWS AT EACH CORNER OF THE SIGN.

SIGNAGE FOR RAINWATER TANKS AND OUTLETS

-DIMENSIONS: 120mm X 150mm
-background colour should be YELLOW;
-text is WHITE on a BLACK background;
-tap symbol is BLACK.

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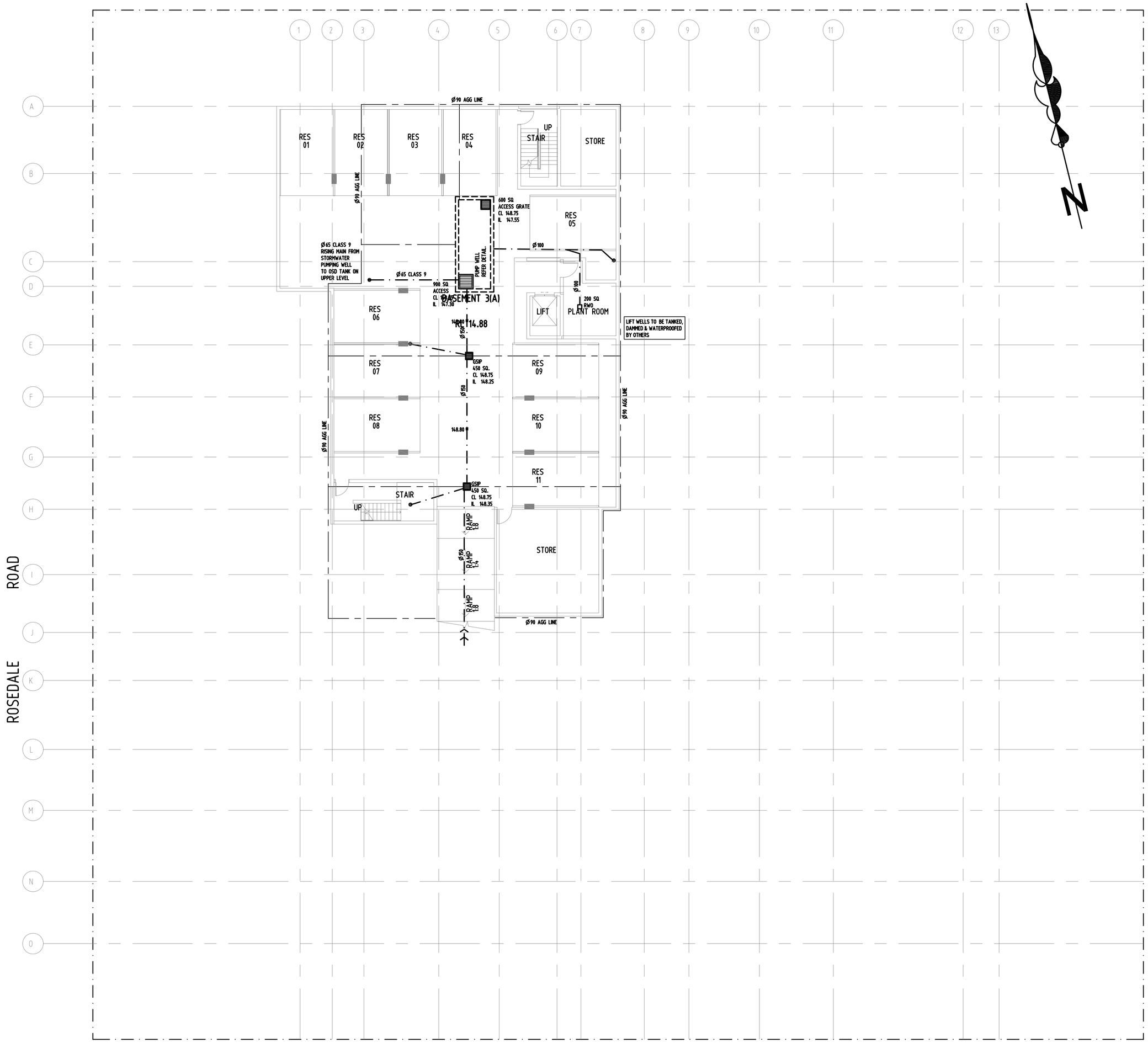
SUITE 5/ 185D FOREST RD. HURSTVILLE NSW 2220. Ph 9585 0223 Fax 9580 8592

PROPOSED DEVELOPMENT AT:
165 - 167 ROSEDALE RD , ST. IVES

STORMWATER DRAINAGE/SEDIMENT CONTROL DETAILS (CONCEPT)

DRAWN	CHECKED	SCALE	DATUM	DRAWING No.	REV.
HE	J.M.ROMANOUS ,B.E., M.I.E.AUST.	AS SHOWN @A1	A.H.D	1090 - S10/10	F



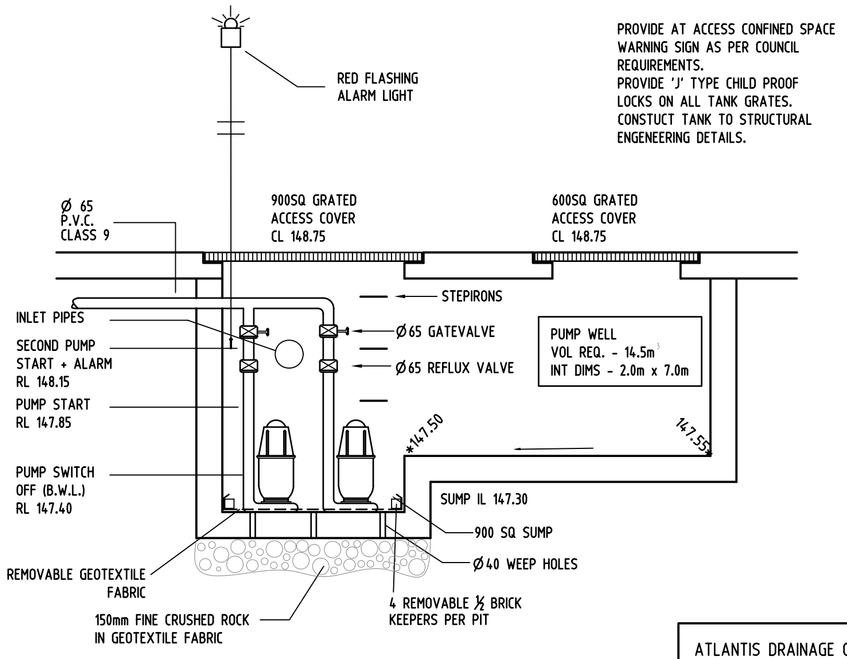
LOWER BASEMENT DRAINAGE PLAN SCALE 1:150

ROOFWATER ONLY

STORMWATER ONLY

ALL PIPES PENETRATING FROM ONE FIRE COMPARTMENT TO ANOTHER MUST BE FITTED WITH AN APPROVED FIRE COLLAR.

ALL STOREROOMS TO BE TREATED, WATERPROOFED TO BE COMPLETELY DRY



BASEMENT PUMPING SYSTEM N.T.S.

BASEMENT PUMPING WELL

Provide two centrifugal drainage SUMP pumps with single phase electric motor capable of discharging 7.0L/s each against a total head of (15.5m) with 10 starts per hour maximum.
Class 1 Zone 2 certified pumps for hazardous areas is required
Switching shall provide for alternative operation of the pumps, high level switch ON/OFF, 2nd pump, and a red light alarm placed prominently in the basement area activated by high level switch ON.

Garage Holding Tank
Area draining to the garage pumping well is the driveway and seepage water to the basement (120m^2)
Storage must be provided for a blackout of at least 2hrs, the 100yrs ARI 2hr storm runoff is:
Q = F x C x I x A
= 1/3600 x 1 x 60 x 120
= 2.0 L/s

Volume accumulated:
V = (2.0 L/s x 2hrs x 3600s)/1000
= 14.5 m^3

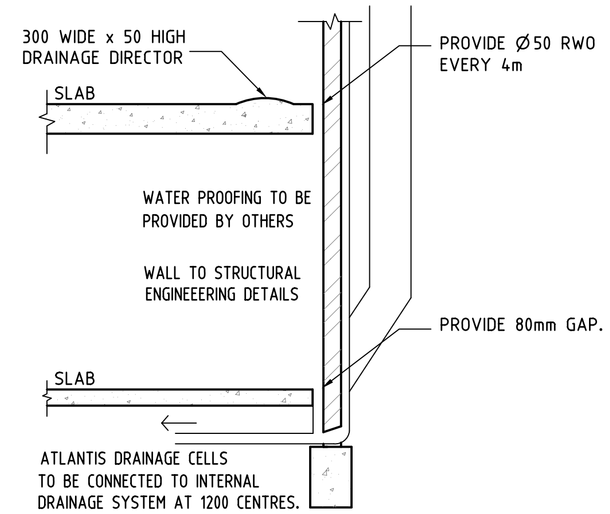
Let the maximum discharge be for the 10 min 100yrs ARI storm. In the event of a stronger storm such as a 5min 100yrs ARI, The standby pump will operate with the duty pump to discharge the extra runoff. In case of a break down, storage is provided in the basement for the excess runoff.
Q = F x C x I x A
= 1/3600 x 1 x 207 x 120
= 7.0 L/s

A Control volume is required to prevent the pump from starting too often (< 10/hr)
CV = 900 x Qp/n
= (900 x 7.0)/ (10 x 1000)
= 0.63 m^3

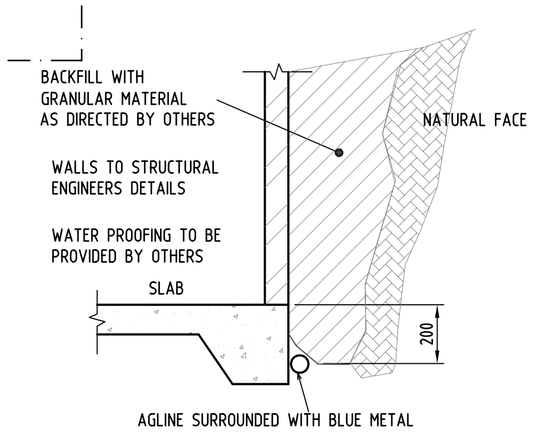
Basement Pumping Duty Calculation.(Q = 7.0 L/s)

ITEM	HEAD
Static Adjustment	11.5m
65mm Pump Fittings EL 25m (6.5m/100)	1.6m
65mm PVC Class 9 EL 25m (6.5m/100)	1.6m
Sundries(about 10%)	0.8m
Total	15.5m

ATLANTIS DRAINAGE CELLS TO BE USED BEHIND BASEMENT RETAINING WALLS USE AN 200 WIDE x 40 THICK LOG WRAPPED IN GEOTEXTILE FABRIC AT 1200 CENTRES VERTICALLY TO STRUCTURAL ENGINEERS DETAILS. TYPICAL.



TYPICAL BASEMENT WALL DRAINAGE DETAIL N.T.S.
WITH NO SPACE BEHIND THE WALL- SHORING WALL



TYPICAL BASEMENT WALL DRAINAGE DETAIL N.T.S.
WITH SPACE BEHIND THE WALL

NOT FOR CONSTRUCTION

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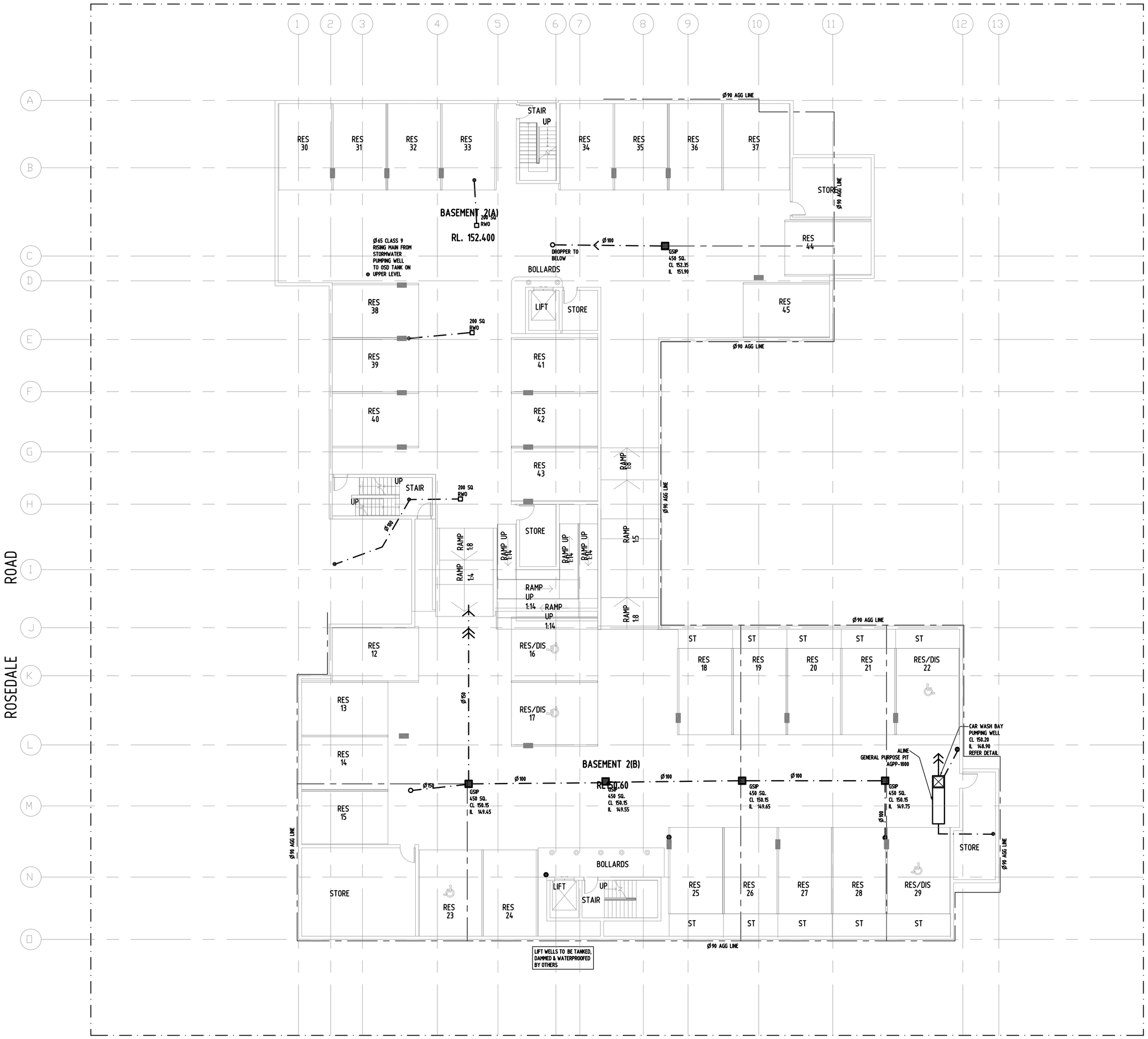
PROPOSED DEVELOPMENT AT:
165 - 167 ROSEDALE RD , ST. IVES

STORMWATER DRAINAGE/SEDIMENT CONTROL DETAILS (CONCEPT)

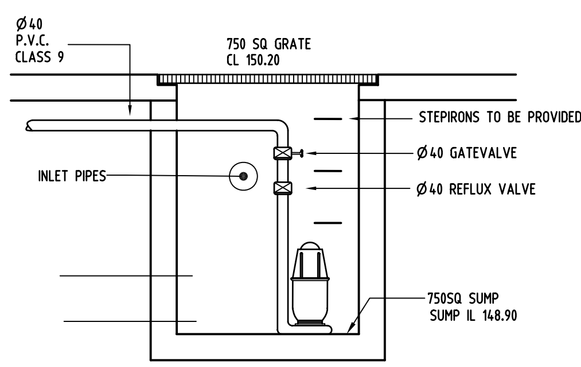
DRAWN	CHECKED	SCALE	DATUM	DRAWING No.	REV.
HE	J.M.ROMANOUS ,B.E., M.I.E.AUST.	AS SHOWN @A1	A.H.D	1090 - S1/10	F



MIDDLE BASEMENT DRAINAGE PLAN SCALE 1:150

ROOFWATER ONLY

STORMWATER ONLY



CARWASH BAY PUMPING SYSTEM N.T.S.

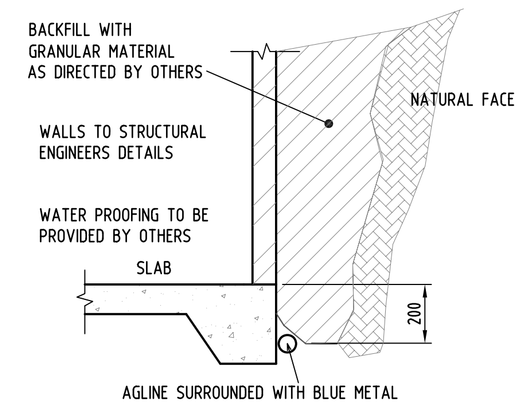
CAR WASH BAY

PROVIED ONE CENTRIFUGAL DRAINAGE SUMP PUMP WITH SINGLE PHASE ELECTRIC MOTOR CAPABLE OF DISCHARGING A MAXIMUM OF (2 L/s) AGAINST A TOTAL HEAD OF (12m) WITH 10 STARTS PER HOUR MAXIMUM.

A CONTROL VOLUME IS REQUIRED TO PREVENT THE PUMP FROM STARTING TOO OFTEN (< 10/hr)
CV = 900 x Qp/n
= (900 x 2.4)/ (10 x 1000)
= 0.18m³

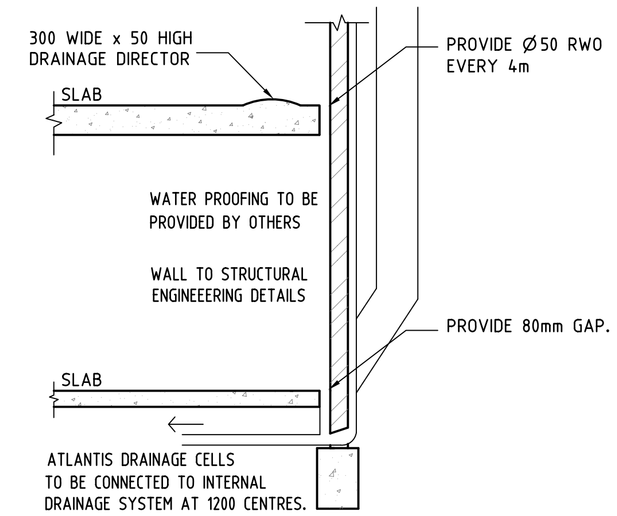
CAR WASH BAY PUMPING DUTY CALCULATOIN (Q = 2.0L/s MAXIMUM)

ITEM	HEAD
STATIC ADJUSTMENT	8.0m
40mm PUMP FITTINGS EL 20m (7.0m/100)	1.5m
50mm PVC CLASS 9 EL 20m (7.0m/100)	1.5m
SUNDRIES(ABOUT 10%)	1.0m
TOTAL	12.0m



TYPICAL BASEMENT WALL DRAINAGE DETAIL N.T.S. WITH SPACE BEHIND THE WALL

ATLANTIS DRAINAGE CELLS TO BE USED BEHIND BASEMENT RETAINING WALLS USE AN 200 WIDE x 40 THICK LOG WRAPPED IN GEOTEXTILE FABRIC AT 1200 CENTRES VERTICALLY TO STRUCTURAL ENGINEERS DETAILS. TYPICAL.



TYPICAL BASEMENT WALL DRAINAGE DETAIL N.T.S. WITH NO SPACE BEHIND THE WALL- SHORING WALL

ALL PIPES PENETRATING FROM ONE FIRE COMPARTMENT TO ANOTHER MUST BE FITTED WITH AN APPROVED FIRE COLLAR.

ALL STOREROOMS TO BE TREATED, WATERPROOFED TO BE COMPLETELY DRY

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PROPOSED DEVELOPMENT AT:
165 - 167 ROSEDALE RD , ST. IVES

STORMWATER DRAINAGE/SEDIMENT CONTROL DETAILS (CONCEPT)

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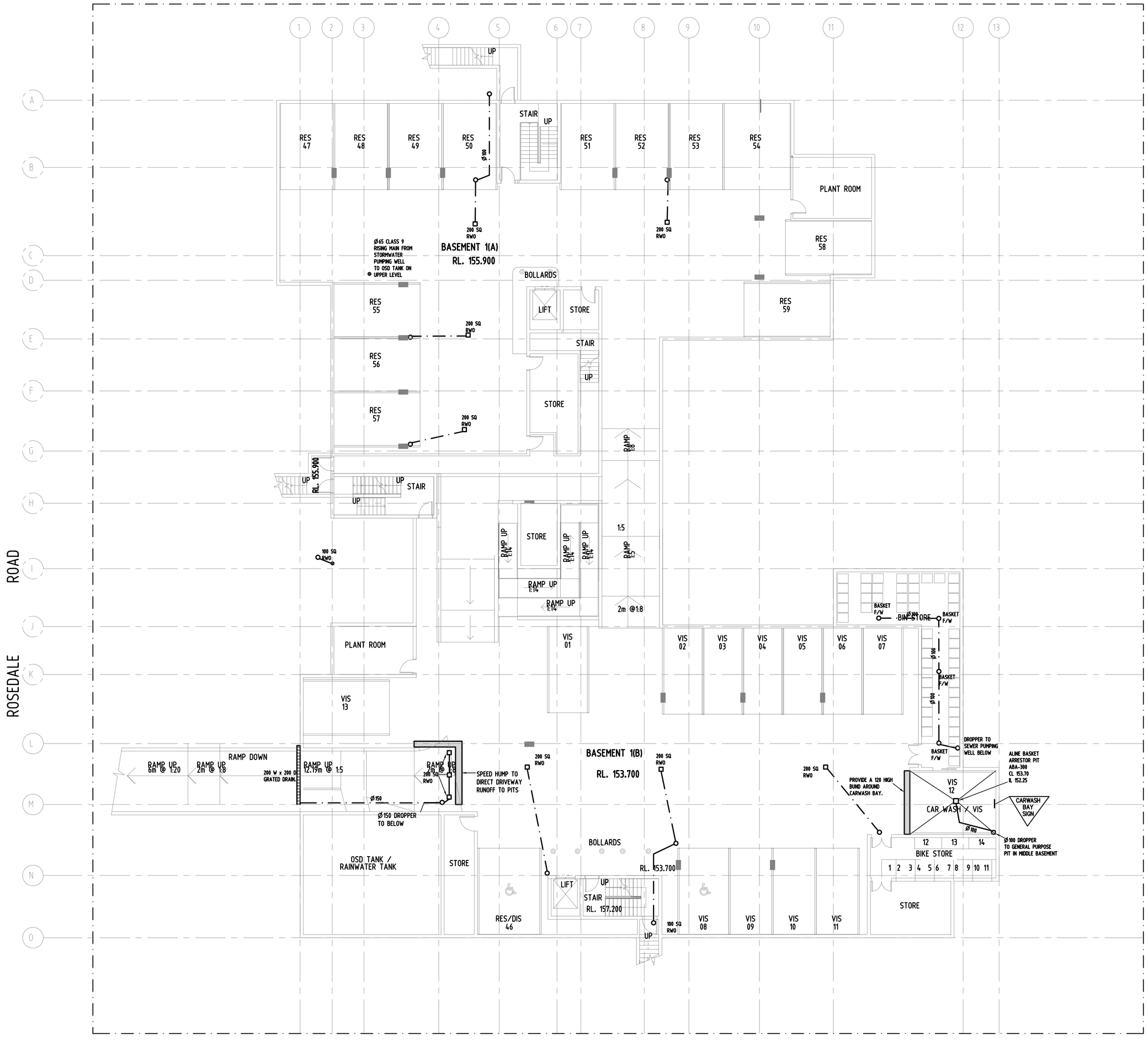
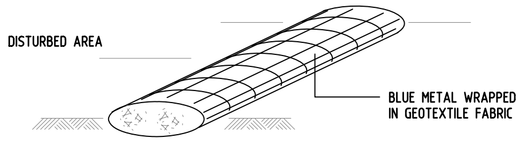
HE	J.M.ROMANOUS ,B.E., M.I.E.AUST.	AS SHOWN @A1	A.H.D	1090 - S2/10	F



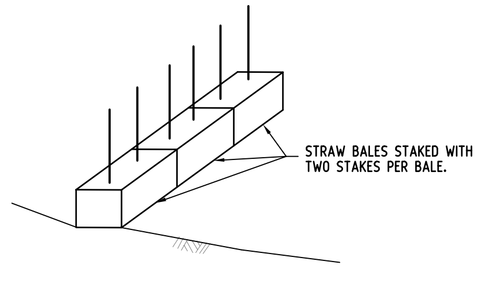
UPPER BASEMENT DRAINAGE PLAN SCALE 1:150

ROOFWATER ONLY

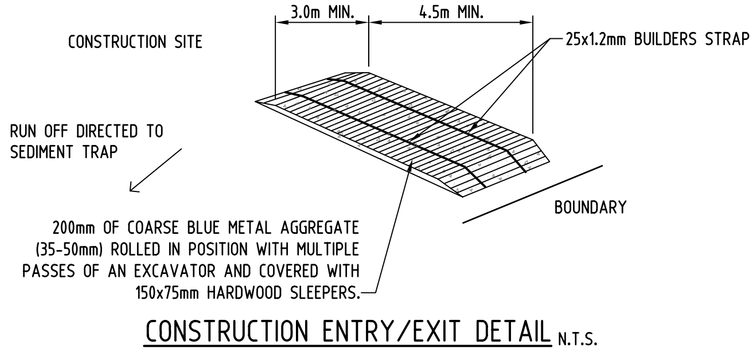
STORMWATER ONLY



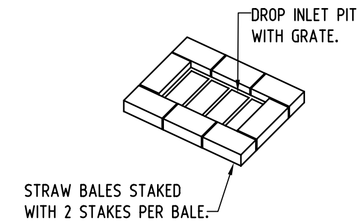
SEDIMENT BARRIER N.T.S.



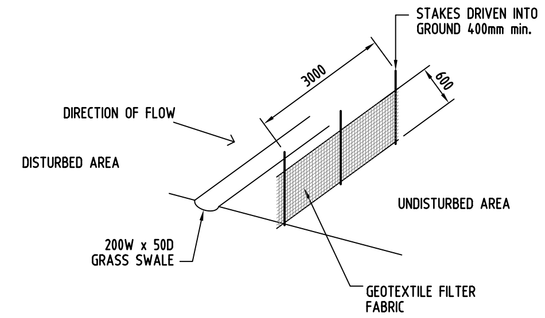
STRAW BALE SEDIMENT TRAP N.T.S



CONSTRUCTION ENTRY/EXIT DETAIL N.T.S.



STRAW BALE DROP INLET SEDIMENT TRAP
N.T.S.



SEDIMENT FENCE DETAIL N.T.S

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ALL STOREROOMS TO BE TREATED, WATERPROOFED TO BE COMPLETELY DRY

SIGNAGE TO BE PROVIDED IN CARWASH BAY:
AS PER SYDNEY WATER REQUIREMENTS.

CAR WASH ONLY

NO DEGREASING OR MECHANICAL WORK IN WASH BAY

NOTES
1 - Approval to be sought from Sydney Water Trade Waste Section.
2 - A trade Waste Permit must be obtained from Sydney Water.
3 - A Sydney Water Trade Waste inspector is to inspect the work on completion.

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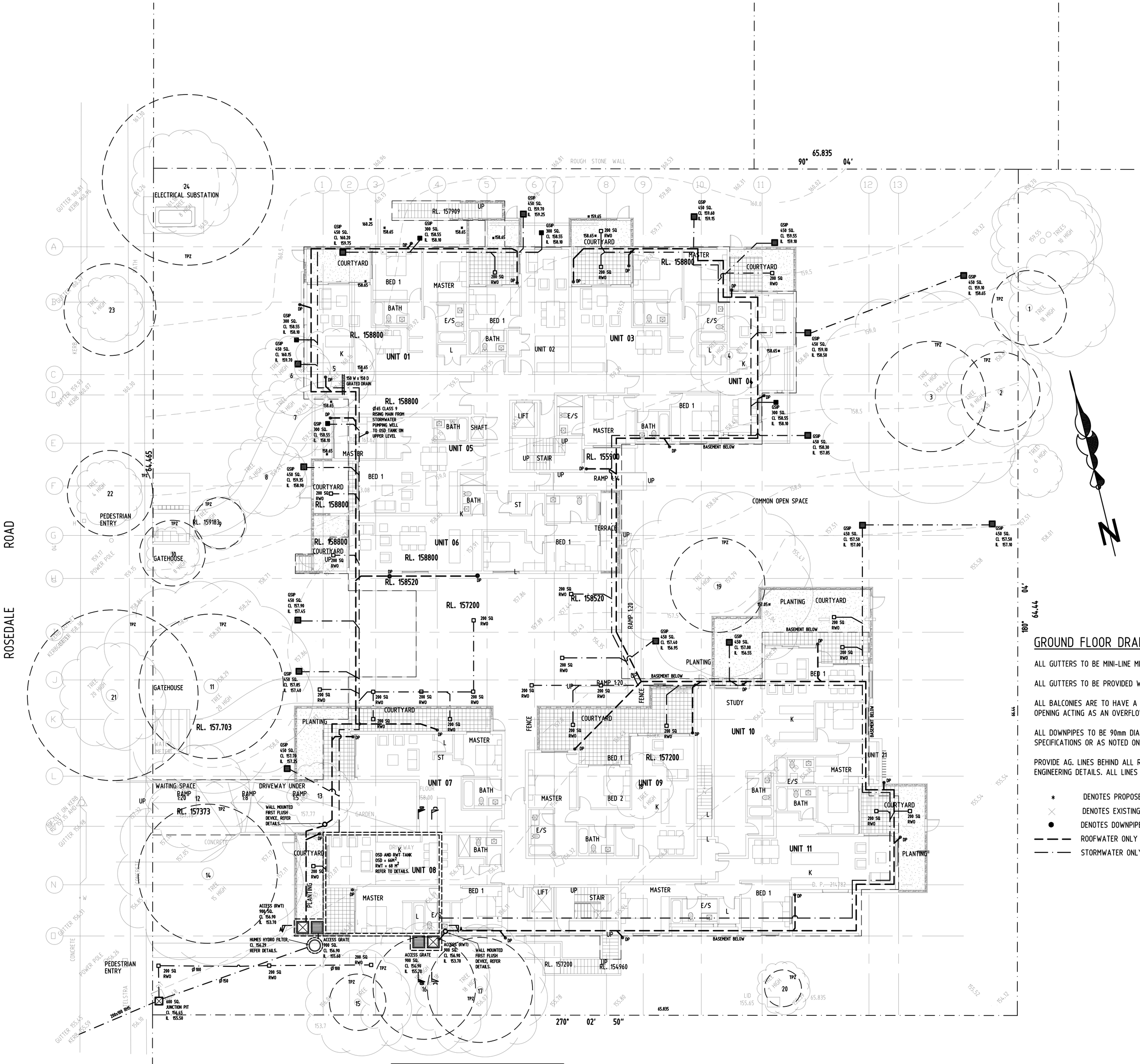
PROPOSED DEVELOPMENT AT:
165 - 167 ROSEDALE RD , ST. IVES

STORMWATER DRAINAGE/SEDIMENT CONTROL DETAILS (CONCEPT)

DRAWN	CHECKED	SCALE	DATUM	DRAWING No.	REV.
HE	J.M.ROMANOUS ,B.E., M.I.E.AUST.	AS SHOWN @A1	A.H.D	1090 - S3/10	F


ROSEDALE
ROAD
65.835
90° 04'
270° 02' 50"
64.665
64.44
180° 04'
ROUGH STONE WALL
24
ELECTRICAL SUBSTATION
23
22
PEDESTRIAN ENTRY
21
GATEHOUSE
10
GATEHOUSE
11
19
20
17
16
15
14
12
13
8
7
6
5
4
3
2
1
UNIT 01
UNIT 02
UNIT 03
UNIT 04
UNIT 05
UNIT 06
UNIT 07
UNIT 08
UNIT 09
UNIT 10
UNIT 11
UNIT 21
COURTYARD
BED 1
BED 2
MASTER
BATH
E/S
LIFT
SHAFT
STAIR
UP STAIR
RAMP 1:4
RAMP 1:20
TERRACE
COMMON OPEN SPACE
PLANTING
STUDY
BASEMENT BELOW
RL. 158800
RL. 155900
RL. 158520
RL. 157200
RL. 157909
RL. 157703
RL. 157373
RL. 159183
RL. 154960
150 W x 150 D GRATED DRAIN
Ø165 CLASS 9 RISING MAIN FROM STORMWATER PUMPING WELL TO OSD TANK ON UPPER LEVEL
WALL MOUNTED FIRST FLUSH DEVICE, REFER DETAILS.
OSD AND RWT TANK OSD = 66M³ RWT = 68 M³ REFER TO DETAILS.
ACCESS (RWT) 900 SQ. CL 156.90 IL 153.70
ACCESS GRATE 900 SQ. CL 156.90 IL 155.70
HUMES HYDRO FILTER, CL 156.29 REFER DETAILS.
600 SQ. JUNCTION PIT CL 156.45 IL 155.50
DRIVEWAY UNDER
WAITING SPACE
WATER METER
POWER POLE
TREE 4 HIGH
TREE 6 HIGH
TREE 8 HIGH
TREE 10 HIGH
TREE 12 HIGH
TREE 15 HIGH
TREE 18 HIGH
TREES 10 HIGH
TPZ
ROUGH STONE WALL
FENCE
CONCRETE
GARDEN
GUTTER 159.36
KERB 160.07
GUTTER 160.89
KERB 160.96
GUTTER 159.25
KERB 159.36
GUTTER 158.45
KERB 158.59
GUTTER 157.85
KERB 157.99
GUTTER 157.45
KERB 157.59
GUTTER 156.10
KERB 156.26
GUTTER 155.54
KERB 155.69
GUTTER 154.82
KERB 154.96
GUTTER 154.25
KERB 154.39
GUTTER 153.65
KERB 153.79
GUTTER 153.05
KERB 153.19
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GUTTER 108.65
KERB 108.79
GUTTER 108.05
KERB 108.19
GUTTER 107.45
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GUTTER 105.05
KERB 105.19
GUTTER 104.45
KERB 104.59
GUTTER 103.85
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KERB 103.39
GUTTER 102.65
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GUTTER 102.05
KERB 102.19
GUTTER 101.45
KERB 101.59
GUTTER 100.85
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GUTTER 100.25
KERB 100.39
GUTTER 99.65
KERB 99.79
GUTTER 99.05
KERB 99.19
GUTTER 98.45
KERB 98.59
GUTTER 97.85
KERB 97.99
GUTTER 97.25
KERB 97.39
GUTTER 96.65
KERB 96.79
GUTTER 96.05
KERB 96.19
GUTTER 95.45
KERB 95.59
GUTTER 94.85
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GUTTER 94.25
KERB 94.39
GUTTER 93.65
KERB 93.79
GUTTER 93.05
KERB 93.19
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GUTTER 91.25
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KERB 90.79
GUTTER 90.05
KERB 90.19
GUTTER 89.45
KERB 89.59
GUTTER 88.85
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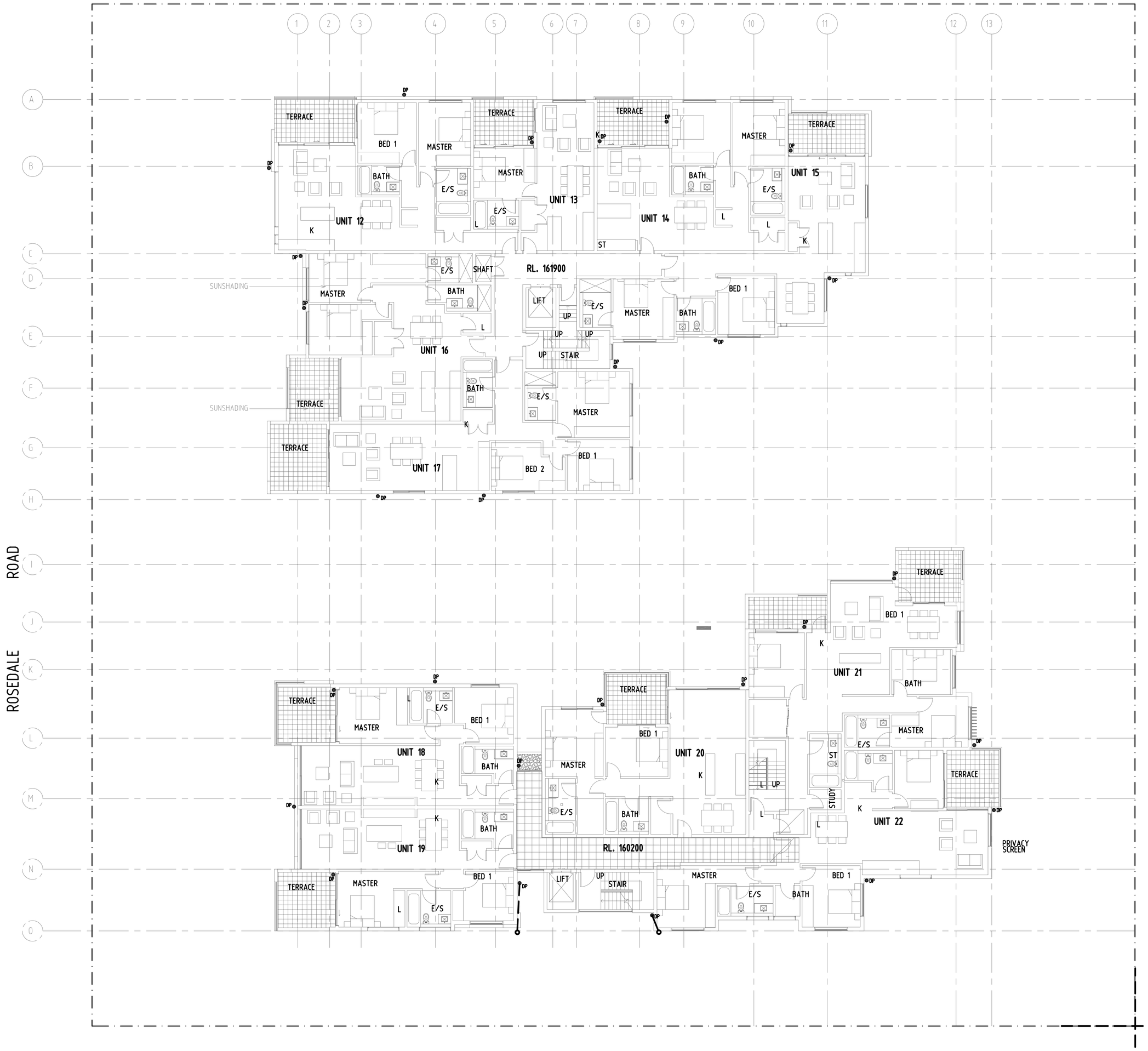
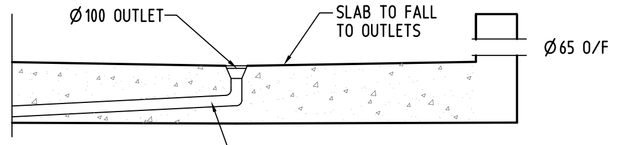


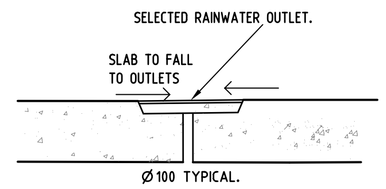
FIRST FLOOR DRAINAGE PLAN SCALE 1:150

ROOFWATER ONLY

STORMWATER ONLY



BALCONY OUTLET DETAIL N.T.S.



RAINWATER OUTLET DETAIL (RWO) DETAIL N.T.S

PIPE LOCATIONS ARE INDICATIVE AND ALL PIPEWORK TO BE CONCEALED INSIDE THE BUILDING FACADE AS SHOWN ON ARCHTECTURAL PLANS TO FUTURE DETAILS.

ALL PIPES PENETRATING FROM ONE FIRE COMPARTMENT TO ANOTHER MUST BE FITTED WITH AN APPROVED FIRE COLLAR.

SOUND INSULATION ON PIPES TO BE PROVIDED TO COMPLY WITH THE BCA REQUIREMENTS.

NOT FOR CONSTRUCTION

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN
F	06.12.2010	ISSUED FOR DA APPROVAL	CF
E	20.07.2010	REVISED TO COUNCIL REQ- WATER TREATMENT DEVICE ADDED	HE
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JOHN ROMANOUS & ASSOCIATES PTY. LTD.
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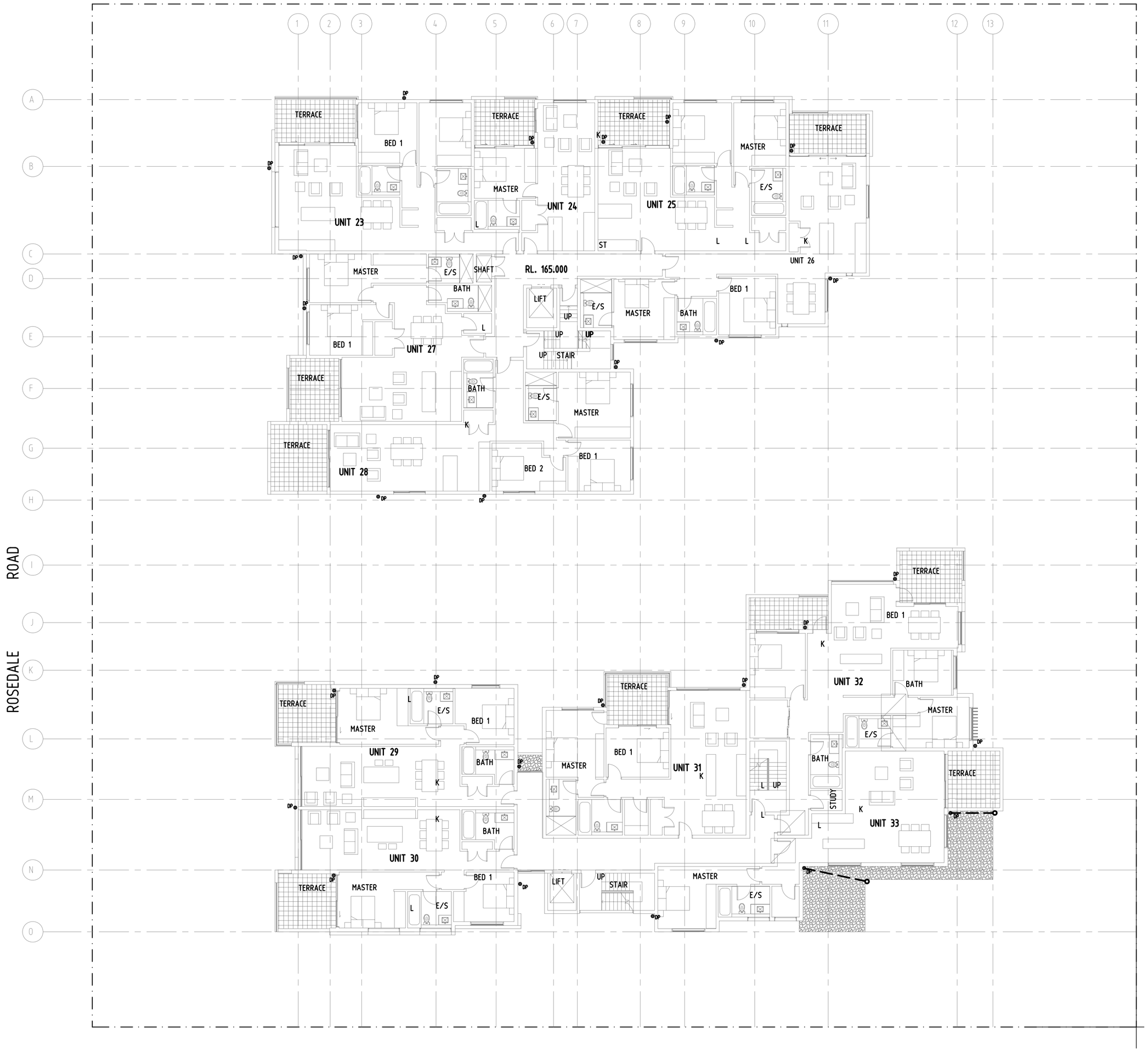
SUITE 5/ 185D FOREST RD. HURSTVILLE NSW 2220. Ph 9585 0223 Fax 9580 8592

PROPOSED DEVELOPMENT AT:
165 - 167 ROSEDALE RD , ST. IVES

STORMWATER DRAINAGE/SEDIMENT CONTROL DETAILS (CONCEPT)

DRAWN	CHECKED	SCALE	DATUM	DRAWING No.	REV.
HE	J.M.ROMANOUS ,B.E., M.I.E.AUST.	AS SHOWN @A1	A.H.D	1090 - S5/10	F

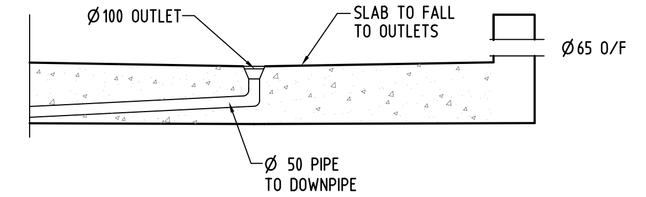


2ND & 3RD FLOOR DRAINAGE PLAN SCALE 1:150

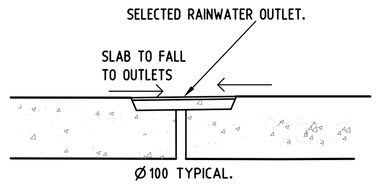
— — — ROOFWATER ONLY

— · — STORMWATER ONLY

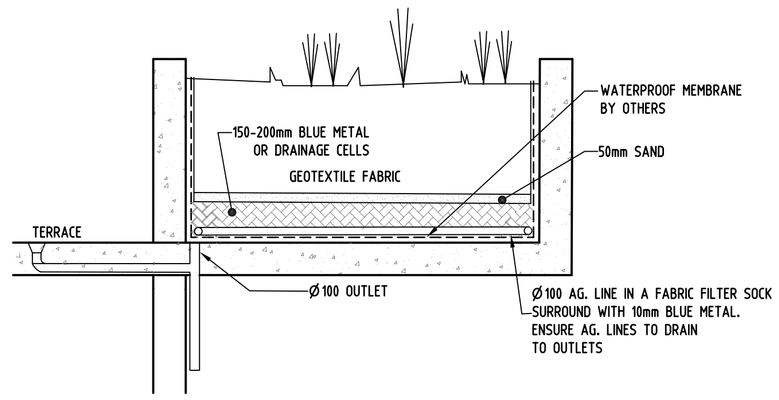
PIPE LOCATIONS ARE INDICATIVE AND ALL PIPEWORK TO BE CONCEALED INSIDE THE BUILDING FACADE AS SHOWN ON ARCHTECTURAL PLANS TO FUTURE DETAILS.



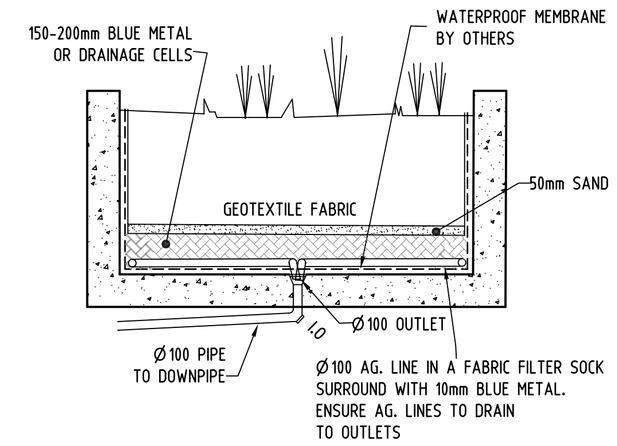
BALCONY OUTLET DETAIL N.T.S.



RAINWATER OUTLET DETAIL (RWO) DETAIL N.T.S



TYPICAL PLANTER DETAIL N.T.S.



TYPICAL PLANTER DETAIL N.T.S.

SOUND INSULATION ON PIPES TO BE PROVIDED TO COMPLY WITH THE BCA REQUIREMENTS.

NOT FOR CONSTRUCTION

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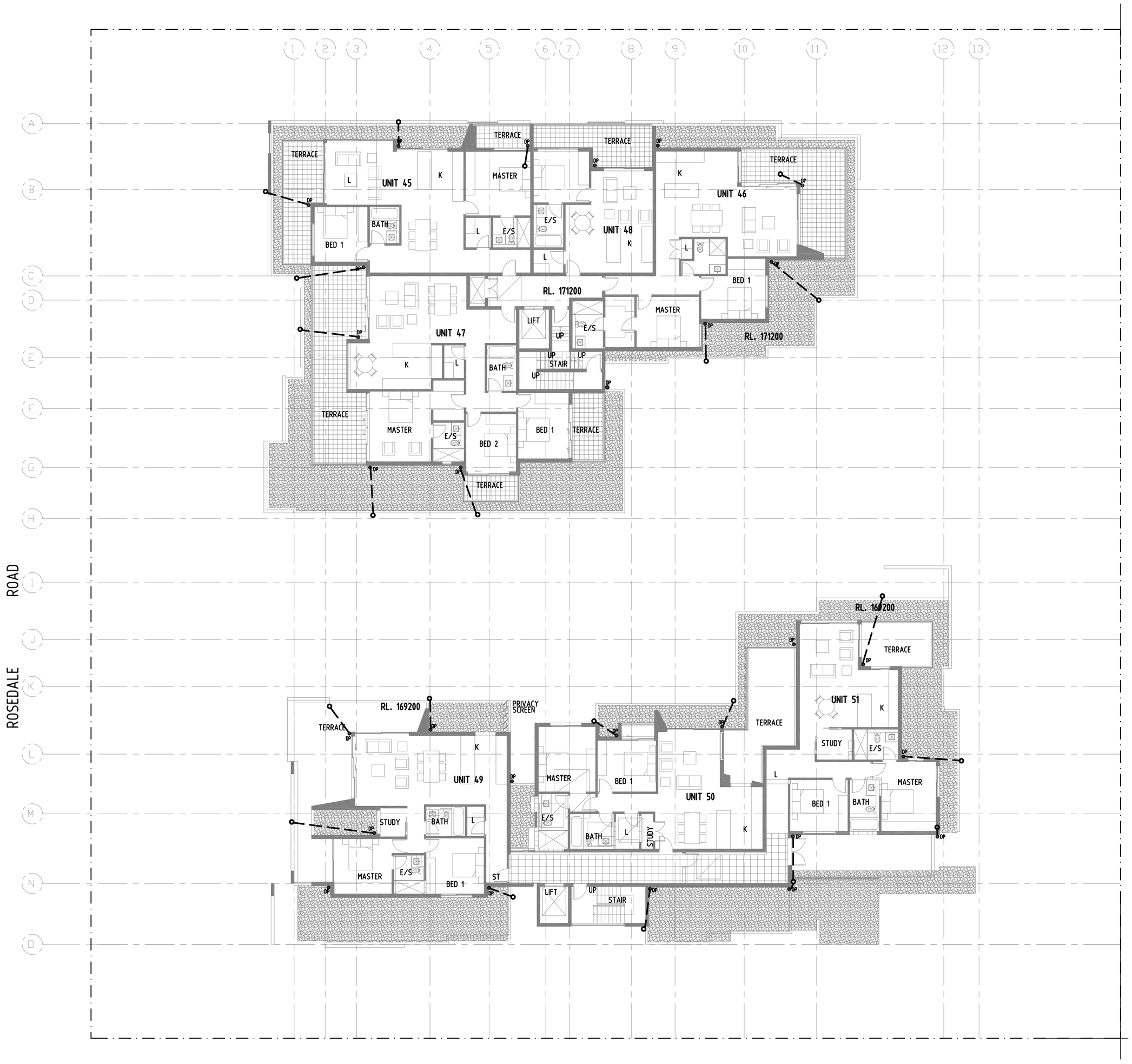
PROPOSED DEVELOPMENT AT:
165 - 167 ROSEDALE RD , ST. IVES

STORMWATER DRAINAGE/SEDIMENT CONTROL DETAILS (CONCEPT)

DRAWN	CHECKED	SCALE	DATUM	DRAWING No.	REV.
HE	J.M.ROMANOUS ,B.E., M.I.E.AUST.	AS SHOWN @A1	A.H.D	1090 - S6/10	F

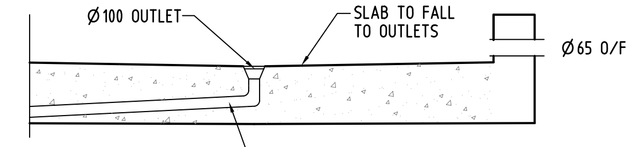


4TH FLOOR DRAINAGE PLAN SCALE 1:150

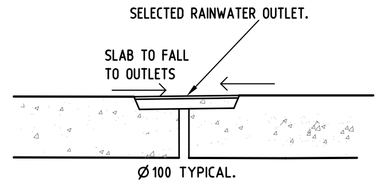
ROOFWATER ONLY

STORMWATER ONLY

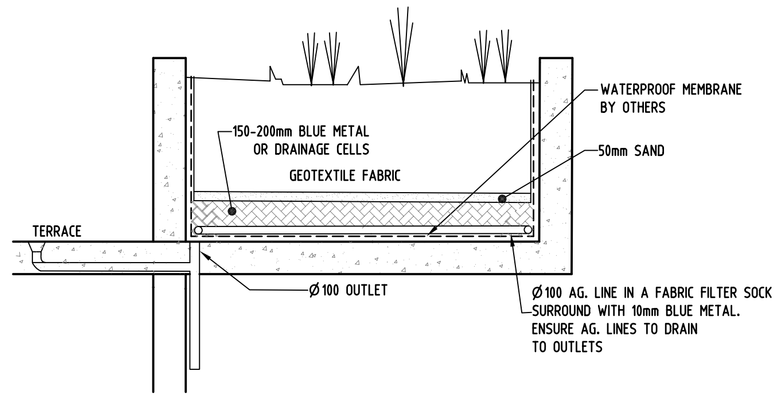
PIPE LOCATIONS ARE INDICATIVE AND ALL PIPEWORK TO BE CONCEALED INSIDE THE BUILDING FACADE AS SHOWN ON ARCHTECTURAL PLANS TO FUTURE DETAILS.



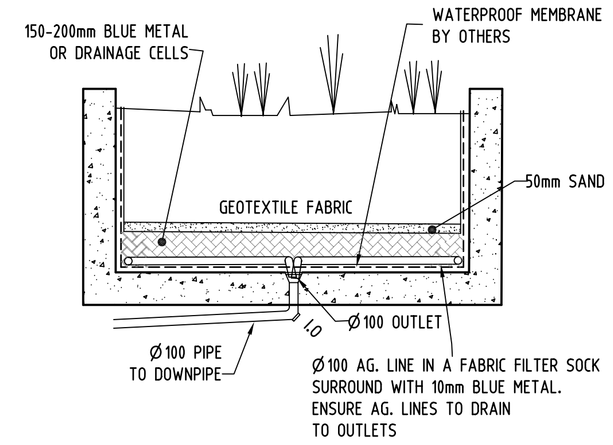
BALCONY OUTLET DETAIL N.T.S.



RAINWATER OUTLET DETAIL (RWO) DETAIL N.T.S



TYPICAL PLANTER DETAIL N.T.S.



TYPICAL PLANTER DETAIL N.T.S.

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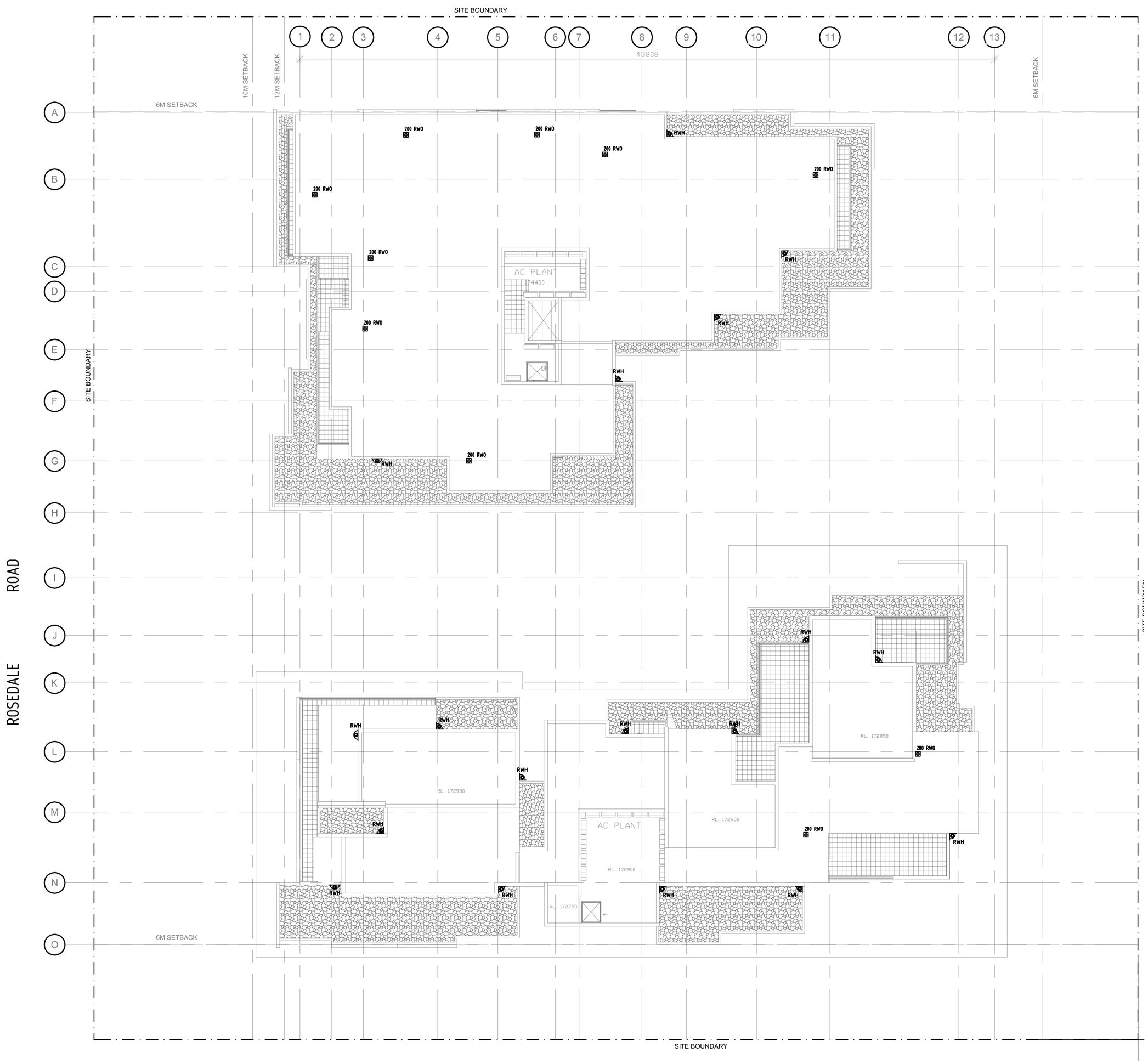
PROPOSED DEVELOPMENT AT:
165 - 167 ROSEDALE RD , ST. IVES

STORMWATER DRAINAGE/SEDIMENT CONTROL DETAILS (CONCEPT)

DRAWN	CHECKED	SCALE	DATUM	DRAWING No.	REV.
HE	J.M.ROMANOUS ,B.E., M.I.E.AUST.	AS SHOWN @A1	A.H.D	1090 - S7/10	F



ROOF DRAINAGE PLAN SCALE 1:150

ROOFWATER ONLY

STORMWATER ONLY

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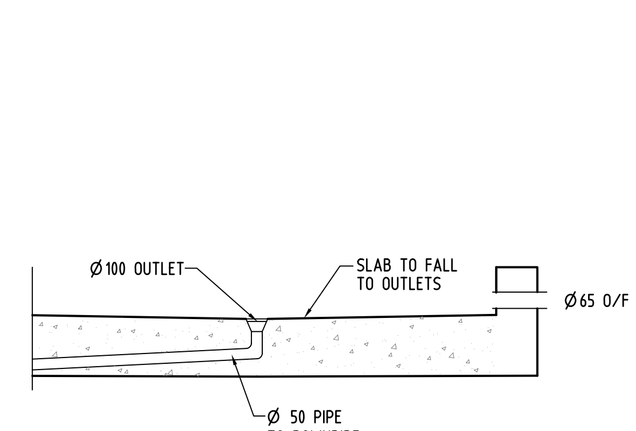
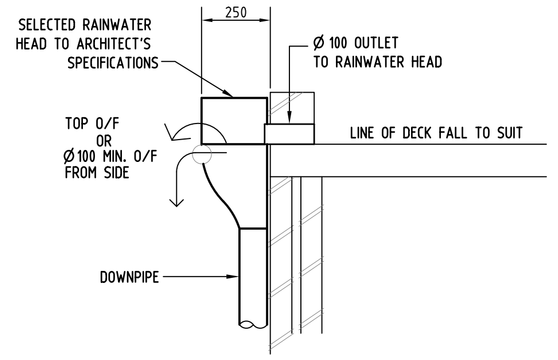
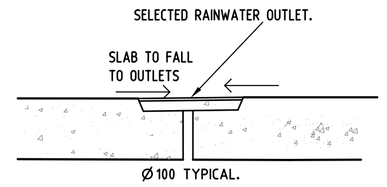


BALCONY OUTLET DETAIL N.T.S.



RAINWATER HEAD DETAIL TYPICAL N.T.S



RAINWATER OUTLET DETAIL (RWO) DETAIL N.T.S

SOUND INSULATION ON PIPES TO BE PROVIDED TO COMPLY WITH THE BCA REQUIREMENTS.

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A		ISSUED TO THE ARCHITECT	HE

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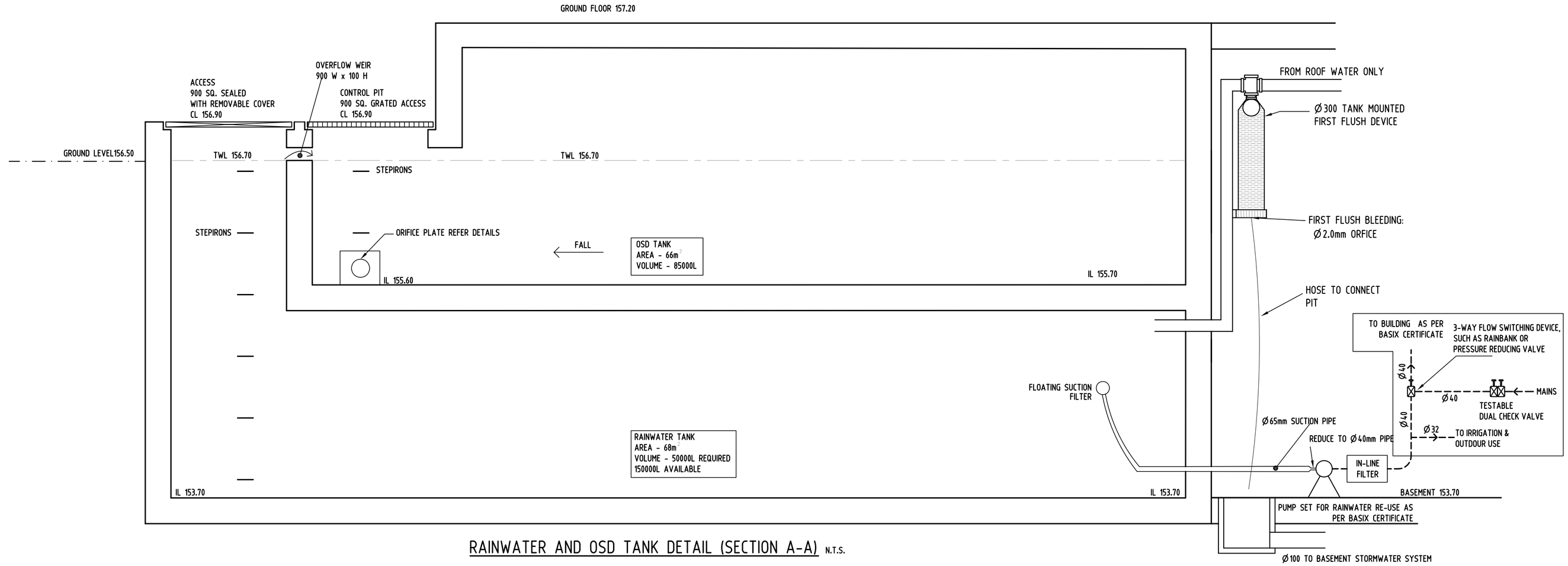
Ph 9585 0223 Fax 9580 8592

PROPOSED DEVELOPMENT AT:
165 - 167 ROSEDALE RD , ST. IVES

STORMWATER DRAINAGE/SEDIMENT CONTROL DETAILS

DRAWN	CHECKED	SCALE	DATUM	DRAWING No.	REV.
HE		AS SHOWN	A.H.D		F



RAINWATER AND OSD TANK DETAIL (SECTION A-A) N.T.S.

RAINWATER RE-USE NOTES

PROVIDE SIGN IN PROMINENT LOCATION AT FRONT OF PROPERTY NOTING "RAINWATER IN USE".

MARK TANK OUTLETS "NON-POTABLE WATER"

RECYCLED RAINWATER TO SERVICE ALL BUILDING TOILET CISTERNS.

OVER FLOW FROM RAINWATER TANK TO BE CONNECTED TO STORMWATER SYSTEM.

RAINWATER SUPPLY PIPE WORK ABOVE GROUND MUST BE LABELLED ALONG THEIR LENGTH WITH A PERMANENT MARKING STATING 'RAINWATER' EVERY 500mm OR LESS. BELOW GROUND RAINWATER SUPPLY PIPE WORK MUST HAVE IDENTIFICATION TAPE AT LEAST 75mm WIDE AND MARKED 'RAINWATER' ON THE RAINWATER SUPPLY PIPE AND FASTENED TO THE PIPE AT NOT MORE THAN 3m INTERVALS.

SYDNEY WATER BACKFLOW PREVENTION DEPARTMENT MUST BE CONTACTED REGARDING RECYCLED WATER ON THIS BUILDING AND FOR THE BACKFLOW PREVENTION REQUIREMENTS AND TOP-UP SYSTEM.
PHONE SYDNEY WATER ON 132 092

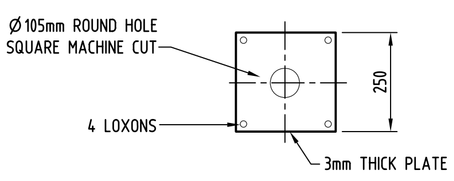
APPROPRIATE WATER METER MUST BE OBTAINED FROM SYDNEY WATER TAKING INTO ACCOUNT RAINWATER RE-USE.

ANY GARDEN OR CARWASH TAPS CONNECTED TO RECYCLED SYSTEM MUST BE LOCATED 1.5m MIN. ABOVE THE SURFACE.

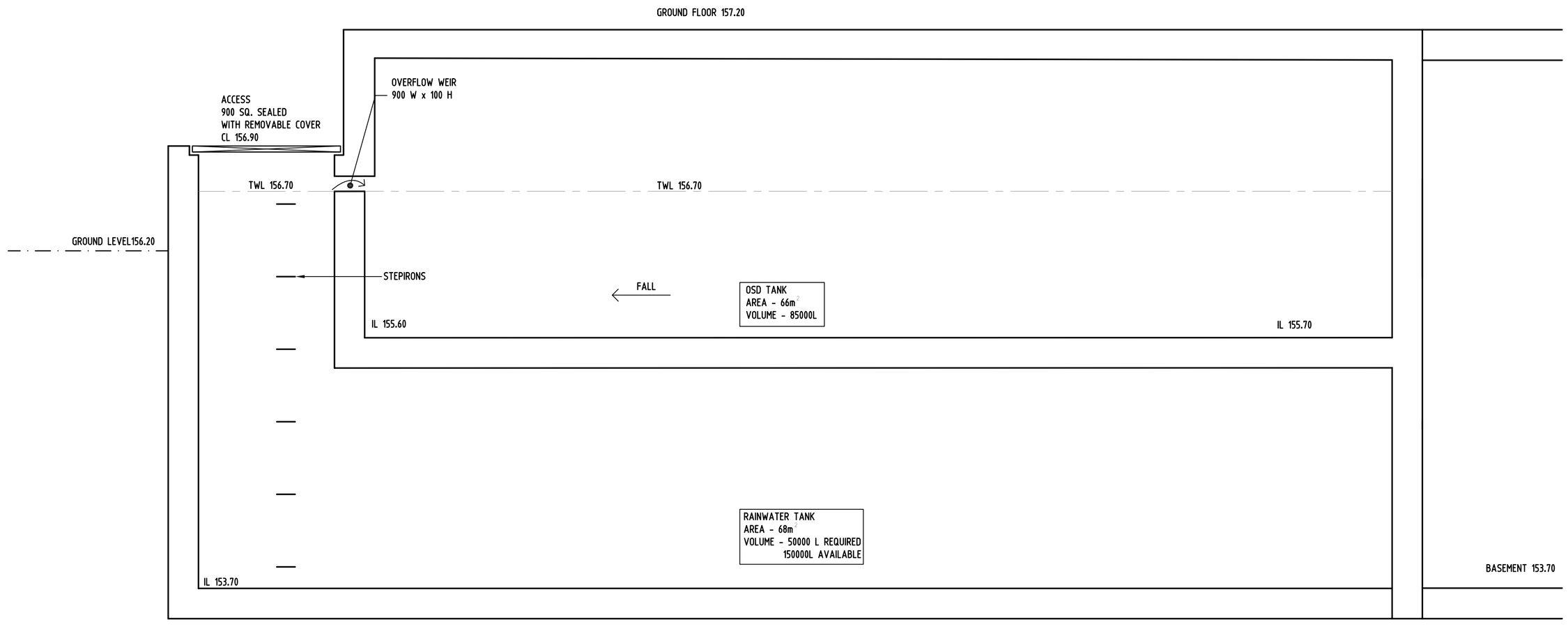
EVERY FIXTURE SERVICED FROM THE RECYCLED WATER SUPPLY MUST BE CLEARLY LABELLED 'RAINWATER'. REFER TO SIGNAGE.

FOR PERIOD OF LOW WATER LEVEL IN THE RAIN WATER TANK A CONNECTION TO THE WATER MAIN IS NEEDED AND TO BE PROVIDED IN ACCORDANCE WITH THE SYDNEY WATER REQUIREMENTS.

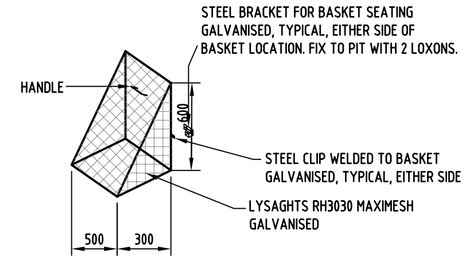
PUMPS AND FILTERS ON OUTLETS FROM RECYCLED SYSTEM TO BE SUPPLIED BY OTHERS AS MAY BE REQUIRED.



ORIFICE PLATE DETAIL N.T.S.



RAINWATER AND OSD TANK DETAIL (SECTION C-C) N.T.S.



SCREEN DETAIL N.T.S

NOT FOR CONSTRUCTION

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A	27.05.2009	ISSUED TO THE ARCHITECT	HE

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PROPOSED DEVELOPMENT AT:
165 - 167 ROSEDALE RD , ST. IVES

STORMWATER DRAINAGE/SEDIMENT CONTROL DETAILS **(CONCEPT)**

DRAWN	CHECKED	SCALE	DATUM	DRAWING No.	REV.
HE	J.M.ROMANOUS ,B.E., M.I.E.AUST.	AS SHOWN @A1	A.H.D	**1090 - S9/10**	**F**