STORMWATER CONCEPT PLAN

AT 23-29 HARVEY AVE, MOOREBANK, NSW

NOTE RE. SERVICES

APPROXIMATE LOCATIONS OF EXISTING SERVICES SHOWN ON LONGITUDINAL SECTION. EXACT LOCATIONS & DEPTHS TO BE ACURATELY LOCATED BY BUILDER CONTRACTOR BY CONTACTING THE RELEVANT AUTHORTIES BEFORE COMMENCEMENT OF ANY WORKS

DIAL 1100 BEFORE YOU DIG

GENERAL NOTES

1. ALL LINES ARE TO BE MIN. 100Ø UPVC @ MIN 1.0% GRADE UNLESS NOTED OTHERWISE.
2. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE & LEVEL ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY EARTHWORKS. ALL DESIGN LEVELS SHOWN ON PLAN SHALL BE VERIFIED ON SITE PRIOR TO THE COMMENCEMENT OF ANY WORK.
3. ALL PIPES TO HAVE MIN 200mm COVER IF LOCATED WITHIN PROPERTY.
4. ALL PITS IN DRIVEWAYS BE HEAVY DUTY GRATES. DIRECT SURFACE FLOW TO ALL GRATED SURFACE INLET PITS.
5. ALL WORK DO BE DONE IN ACCORDANCE WITH COUNCIL'S DCP AND TO COUNCIL'S SATISFACTION.
6. LOCATION OF DOWNPIPES & FLOOR WASTES ARE INDICATIVE ONLY. DOWNPIPE & FLOOR WASTE SIZE, LOCATION & QUANTITY TO BE DETERMINED BY BUILDER & IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS.
7. THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, LANDSCAPE AND STRUCTURAL PLANS.
8. ANY DISCREPANCIES OR OMISSIONS SHALL BE REFERRED TO THE DESIGN ENGINEER AND COUNCIL ENGINEER FOR RESOLUTION.
9. ALL PITS OR GRATES IN TRAFFICABLE AREAS TO BE HEAVY DUTY.
10. ALL GUTTERS WILL BE FITTED WITH LEAF GUARDS AND SHOULD BE INSPECTED AND CLEANED TO ENSURE LEAF LITTER CANNOT ENTER THE DOWNPIPES
11. ALL PIT GRATES ON SITE MUST BE HINGED WITH J-BOLT LOCKDOWN SYSTEM.
12. PITS DEEPER THAN 1m REQUIRE STEP IRONS IN A STAGGERED MANNER. THE DEPTH OF ANY PIT IN EXCESS OF 2m SHALL BE STRUCTURALLY DESIGNED AND CERTIFIED BY A STRUCTURAL ENGINEER AND SUBMITTED TO COUNCIL FOR APPROVAL.
13. PROVIDE GRATED DRAIN IN ALL OPEN AREAS TO THE SKY INCLUDING STAIRS AND CONNECT TO NEAREST STORMWATER SYSTEM.
14. PROVIDE EMERGENCY SPITTERS TO ALL BALCONIES.
15. PROVIDE AGG PIPE IN ALL LANDSCAPE AREA AND CONNECT TO THE STORMWATER DRAINAGE SYSTEM.
16. PROVIDE AGG PIPE BEHIND THE RETAINING WALL AND CONNECT TO THE STORMWATER DRAINAGE SYSTEM.
17. TOP OF KERB AND INVERT OF GUTTER LEVELS ARE TO BE CHECKED ON SITE PRIOR CONSTRUCTION. CONTACT ENGINEER IMMEDIATELY IF LEVEL VARIES FROM DESIGN DRAWING.
18. ALL RETAINING WALL FOR ABOVE GROUND OSD/BIORETENTION BASIN TO BE FULLY CONSTRUCTED WITHIN THE PROPERTY BOUNDARY.

1:150@A1 0 1 2 3 4 5 6 7
1:200@A1 0 1 2 3 4 5 6 7 8 9 10
1:100@A1 0 1 2 3 4 5

NOT FOR CONSTRUCTION

SURFACE INLET PIT DIMENSION

DEPTH TO INVERT OF OUTLET		MINIMUM INTERNAL DIMENSIONS (mm)		
		RECTANGULAR		CIRCULAR
		WIDTH	LENGTH	DIAMETER
	≤600	450	450	600
>600	≤900	600	600	900
>900	≤1200	600	900	1000
>1200		900	900	1000

ON-SITE DETENSION NOTE:

THE OSD BASIN/TANK IS TO BE BUILT TO THE CORRECT LEVEL & SIZE AS PER THIS DESIGN. ANY VARIATIONS ARE TO BE DONE UNDER CONSULTATION FROM OUR OFFICE ONLY. ANY AMENDMENTS WITHOUT OUR APPROVAL WOULD RESULT IN ADDITIONAL FEES FOR REDESIGN AT OC STAGE OR IF A SOLUTION CANNOT BE FOUND, RECONSTRUCTION IS REQUIRED UNDER THE CONTRACTOR'S EXPENSES.

NOTES: DRAINAGE LINES

DRAINAGE LINES SHOWN continuous — TO COLLECT SURFACE WATER

DRAINAGE LINES SHOWN DASHED — RWT — TO COLLECT ROOF WATER ONLY TO RAINWATER TANK

DP : 100Ø DOWN PIPE U.N.O.
▬▬▬▬ : STORMWATER PIPE @1% MIN. U.N.O.
REFER TO AS.3500 PART 3 TABLE 7.2
P1 : 100Ø UPVC PIPE AT 1.0% MIN. GRADE
P2 : 150Ø UPVC PIPE AT 1.0% MIN. GRADE
P3 : 225Ø UPVC PIPE AT 0.5% MIN. GRADE
P4 : 300Ø UPVC PIPE AT 0.4% MIN. GRADE
P5 : 375Ø UPVC PIPE AT 0.4% MIN. GRADE
P6 : 450Ø RCP PIPE AT 0.4% MIN. GRADE

✳ NEW LEVEL
+ EXISTING LEVEL

PROVIDE 150mm GAP UNDER THE FENCE AND IF BLOCK WALL PROVIDED, THEN PROVIDE OPENING FOR EMERGENCY OVERFLOW.

DRAWING SCHEDULE

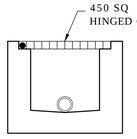
DRAWING No.	DRAWING TITLE
DO0	COVER SHEET, LEGEND & DRAWING SCHEDULE
DO1	BASEMENT 2 STORMWATER DRAINAGE PLAN
DO2	BASEMENT 1 STORMWATER DRAINAGE PLAN
DO3	BASEMENT STORMWATER DRAINAGE DETAILS
DO4	GROUND FLOOR STORMWATER DRAINAGE PLAN
DO5	GROUND FLOOR STORMWATER DRAINAGE DETAILS
DO6	SOIL & WATER MANAGEMENT PLAN AND DETAILS
DO7	MUSIC RESULTS AND DETIALS
DO7	MUSIC LINK REPORT

SYMBOLS

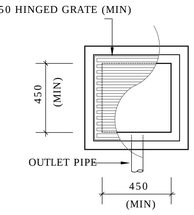
F.F.L.	FINISHED FLOOR LEVEL
T.K.	TOP OF KERB
RL	PIT SURFACE LEVEL
IL	INVERT LEVEL
– – –	STORMWATER DRAINAGE PIPE
—w—	DOWNPIPE TO RAINWATER TANK
•DP	100Ø DOWN PIPE (U.N.O.)
• VD	VERTICAL DROP PIPE
• VR	VERTICAL RISER
• IO	INSPECTION OPENING
	MASONRY RETAINING WALL
• FW	FLOOR WASTE 300Ø
• RWO	RAINWATER OUTLET 150Ø
• DDO	DISH DRAIN OUTLET 100Ø
	GRATED INLET PIT
	GRATED DRAIN
⇦	OVERLAND FLOW PATH
SP	SPREADER
ES	EMERGENCY SPITTER

ABBREVIATIONS

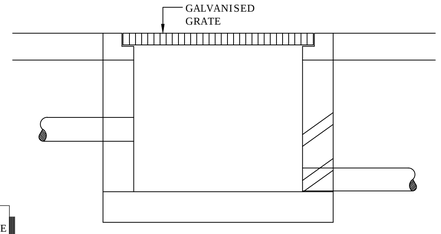
CL	CLEARANCE
DIA	DIAMETER
DDO	DISH DRAIN OUTLET
DP	DOWNPIPE
Ex.	EXISTING
FFL	FINISHED FLOOR LEVEL
GL	GROUND LEVEL
GMS	GALVANISED MILD STEEL
GSIP	GRADED SURFACE INLET PIT
GTD	GRATED TRENCH DRAIN
HL	HIGH LEVEL
IL	INVERT LEVEL
JP	JUNCTION PIT
KIP	KERB INLET PIT
IO	INSPECTION OPENING
LL	LOW LEVEL
O/F	OVERFLOW
PVC	POLYVINYLCHLORIDE
SL	SURFACE LEVEL
STW	STORMWATER
S/S	STAINLESS STELL
U/S	UNDER SIDE



TYPICAL PIT SECTION
N.T.S.



STANDARD PIT
N.T.S.



TYPICAL PIT DETAIL
NTS

SITE OF WORK

LOCALITY SKETCH
NOT TO SCALE

No	AMENDMENT	ENG	DRAFT	DATE	No	AMENDMENT	ENG	DRAFT	DATE
A	FOR D.A. APPROVAL	N.L.	P.A.	18-07-18					

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PROJECT
PROPOSED RESIDENTIAL FLAT BUILDING
23-29 HARVEY AVE,
MOOREBANK, NSW

CONSENT AUTHORITY:
LIVERPOOL CITY COUNCIL

N

SHEET SUBJECT
COVER SHEET, LEGEND AND DRAWING SCHEDULE

PROJECT 23-29 HARVEY AVE, MOOREBANK, NSW			
DATE JUL 18	DRAWN P.A.	DESIGNED N.L.	CHECKED N.L.
SCALE @ A1 N.T.S.		JOB No 18NL157	
AUTHORISED NERMEIN LOKA		DWG No D00	REV A

NOTE RE. SERVICES

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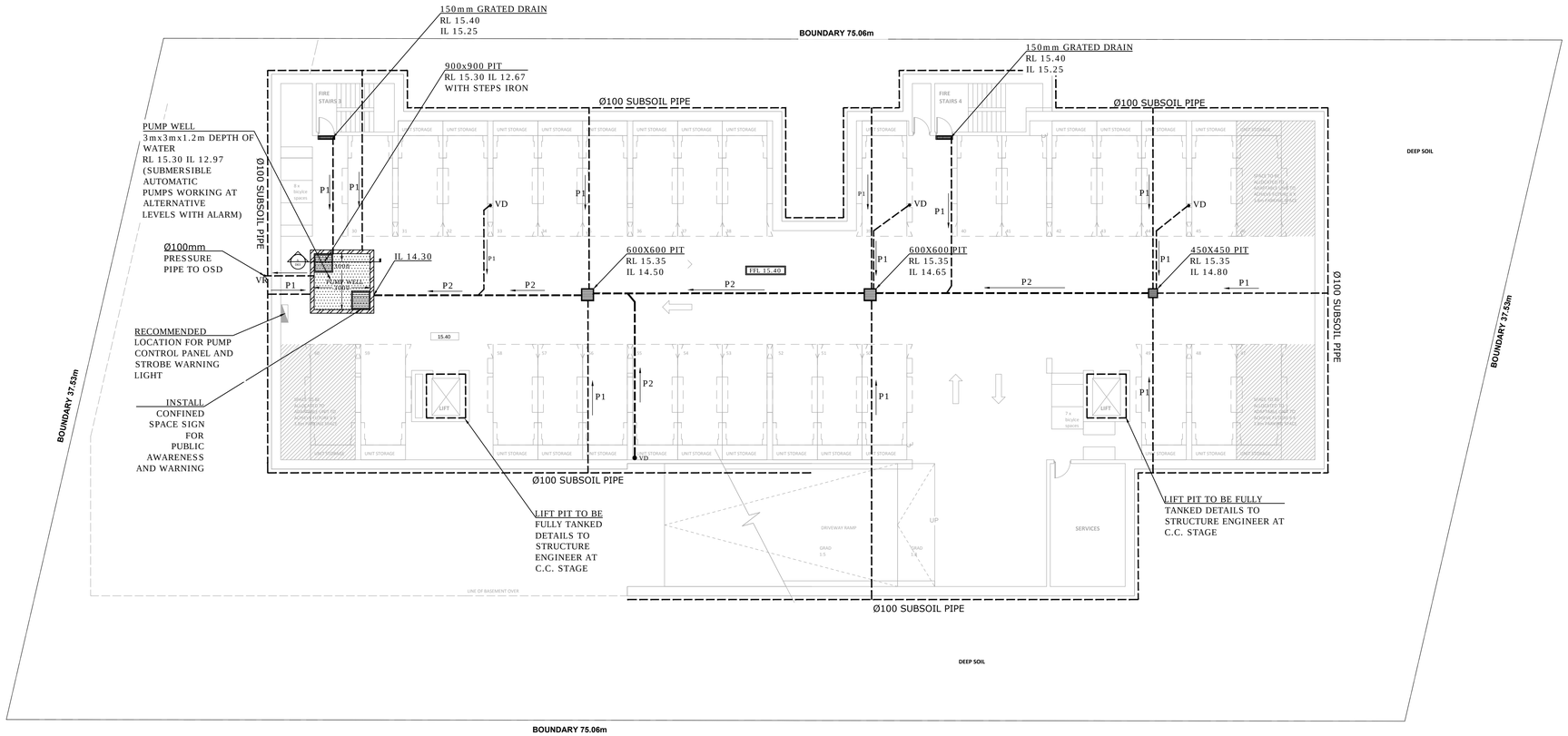
DIAL 1100 BEFORE YOU DIG



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SYMBOLS

F.F.L.	FINISHED FLOOR LEVEL
T.K.	TOP OF KERB
RL	PIT SURFACE LEVEL
IL	INVERT LEVEL
	STORMWATER DRAINAGE PIPE
	DOWNPIPE TO RAINWATER TANK
DP	100Ø DOWN PIPE (U.N.O.)
VD	100Ø VERTICAL DROP (U.N.O.)
VR	VERTICAL RISER
IO	INSPECTION OPENING
	MASONRY RETAINING WALL
FW	FLOOR WASTE 300Ø
DDO	DISH DRAIN OUTLET 100Ø
	GRATED INLET PIT
	GRATED DRAIN
	OVERLAND FLOW PATH
SP	SPREADER
ES	EMERGENCY SPITTER

VD : 100Ø VERTICAL DROP (U.N.O.)

: STORMWATER PIPE @1% MIN. U.N.O.

REFER TO AS.3500 PART 3 TABLE 7.2

P1 : 100Ø UPVC PIPE AT 1.0% MIN. GRADE

P2 : 150Ø UPVC PIPE AT 1.0% MIN. GRADE

P3 : 225Ø UPVC PIPE AT 0.5% MIN. GRADE

NOTES: DRAINAGE LINES

DRAINAGE LINES SHOWN continuous — TO COLLECT SURFACE WATER

DRAINAGE LINES SHOWN DASHED — RWT — TO COLLECT ROOF WATER ONLY TO RAINWATER TANK

BASEMENT 2 STORMWATER DRAINAGE PLAN

SCALE 1:150

1:150@A1 0 1 2 3 4 5 6 7

1:200@A1 0 1 2 3 4 5 6 7 8 9 10

1:100@A1 0 1 2 3 4 5

NOTES: COUNCIL ISSUED FOOTWAY DESIGN LEVELS

COUNCIL'S ISSUED FOOTWAY DESIGN LEVELS TO BE INCORPORATED INTO THE FINISHED LEVELS ONCE ISSUED BY COUNCIL

NOTES: ROAD RESERVE & FOOTWAY DRAINAGE ELEMENTS

ALL STORMWATER DRAINAGE ELEMENTS PROPOSED WITHIN THE ROAD RESERVE AND FOOTWAY SHALL BE CONSTRUCTED UNDER THE SUPERVISION AND TO THE SATISFACTION OF COUNCIL'S ENGINEER.

NOT FOR CONSTRUCTION

No	AMENDMENT	ENG	DRAFT	DATE	No	AMENDMENT	ENG	DRAFT	DATE
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PROJECT
PROPOSED RESIDENTIAL FLAT BUILDING
23-29 HARVEY AVE,
MOORBANK, NSW

CONSENT AUTHORITY:
LIVERPOOL CITY COUNCIL

N

SHEET SUBJECT
BASEMENT 2 STORMWATER DRAINAGE PLAN

PROJECT 23-29 HARVEY AVE, MOOREBANK, NSW			
DATE JUL 18	DRAWN P.A.	DESIGNED N.L.	CHECKED N.L.
SCALE @ A1 AS SHOWN		JOB No 18NL157	
AUTHORISED NERMEIN LOKA		DWG No D01	REV A

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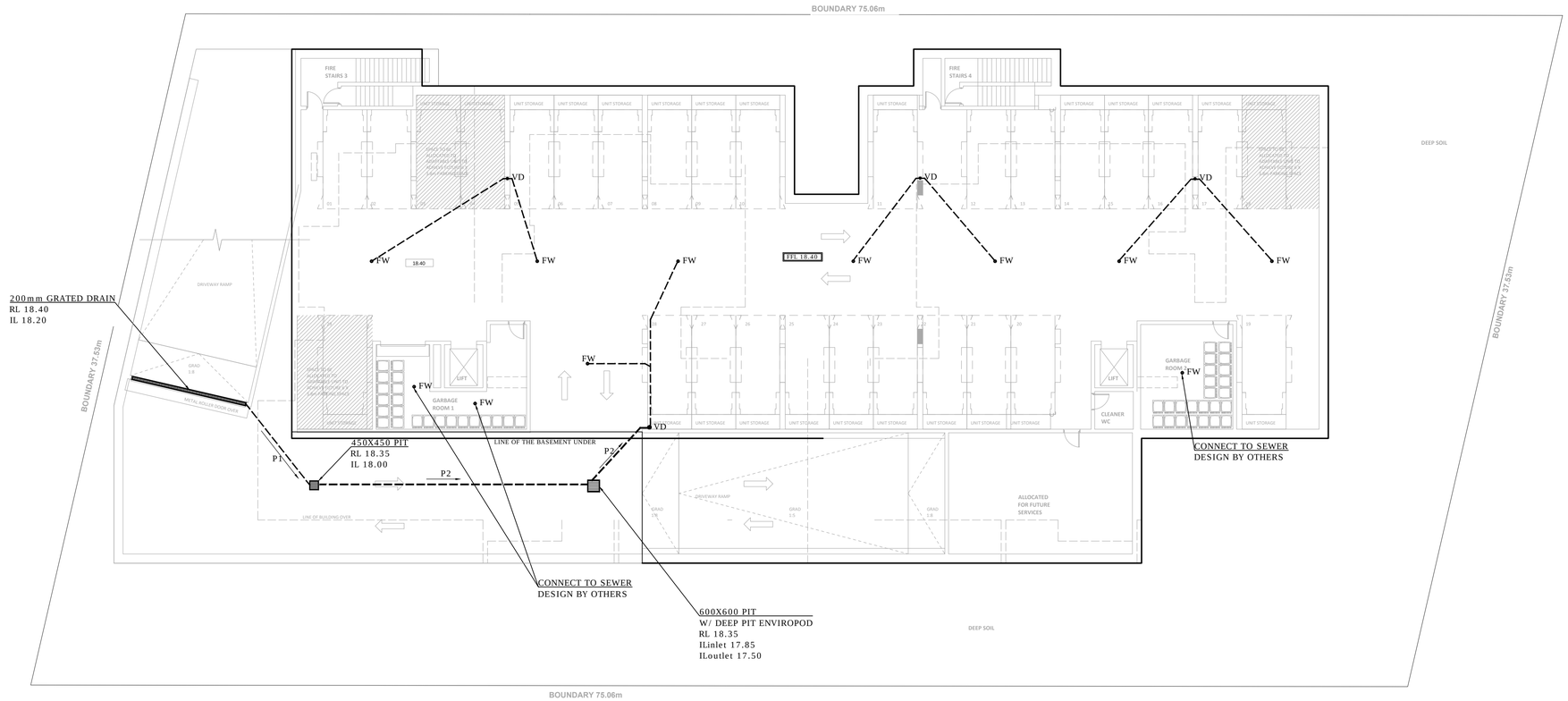

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SYMBOLS

F.F.L.	FINISHED FLOOR LEVEL
T.K.	TOP OF KERB
RL	PIT SURFACE LEVEL
IL	INVERT LEVEL
— — —	STORMWATER DRAINAGE PIPE
—·—	DOWNPIPE TO RAINWATER TANK
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▬▬▬▬▬▬▬ : STORMWATER PIPE @1% MIN. U.N.O.

REFER TO AS.3500 PART 3 TABLE 7.2

P1 : 100Ø UPVC PIPE AT 1.0% MIN. GRADE

P2 : 150Ø UPVC PIPE AT 1.0% MIN. GRADE

P3 : 225Ø UPVC PIPE AT 0.5% MIN. GRADE

NOTES: DRAINAGE LINES

DRAINAGE LINES SHOWN continuous — — — — — —
TO COLLECT SURFACE WATER

DRAINAGE LINES SHOWN DASHED — RWT —
TO COLLECT ROOF WATER ONLY TO RAINWATER TANK

BASEMENT 1 STORMWATER DRAINAGE PLAN

SCALE 1:150

1:150@A1 0 1 2 3 4 5 6 7
1:200@A1 0 1 2 3 4 5 6 7 8 9 10
1:100@A1 0 1 2 3 4 5

NOTES: COUNCIL ISSUED FOOTWAY DESIGN LEVELS
COUNCIL'S ISSUED FOOTWAY DESIGN LEVELS TO BE INCORPORATED INTO THE FINISHED LEVELS ONCE ISSUED BY COUNCIL

NOTES: ROAD RESERVE & FOOTWAY DRAINAGE ELEMENTS
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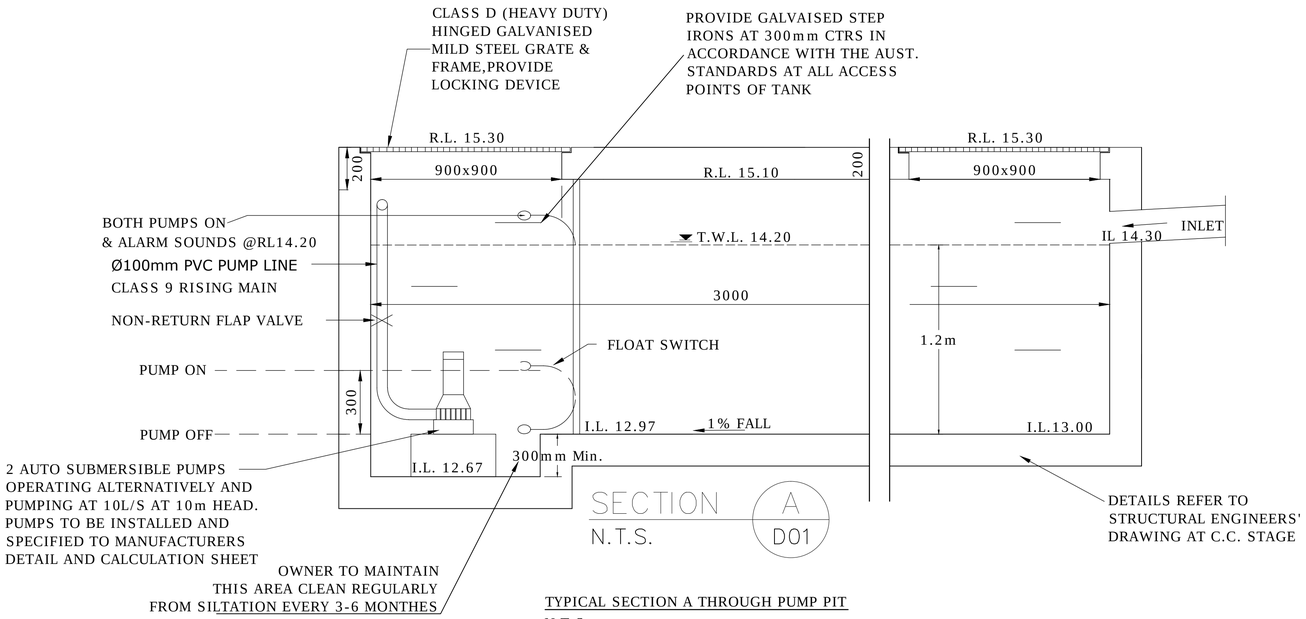
PROPOSED RESIDENTIAL FLAT BUILDING
23-29 HARVEY AVE,
MOOREBANK, NSW

CONSENT AUTHORITY:
LIVERPOOL CITY COUNCIL

N

SHEET SUBJECT
BASEMENT 1 STORMWATER DRAINAGE PLAN

PROJECT 23-29 HARVEY AVE, MOOREBANK, NSW			
DATE JUL 18	DRAWN P.A.	DESIGNED N.L.	CHECKED N.L.
SCALE @ A1 AS SHOWN		JOB No 18NL157	
AUTHORISED NERMEIN LOKA		DWG No D02	REV A



TYPICAL SECTION A THROUGH PUMP PIT

N.T.S.
PUMP WELL VOLUME 10.8cum

PUMP SPECIFICATIONS

STANDARD PUMP-OUT NOTES

THE PUMP-OUT SYSTEM IS DESIGNED TO WORK IN THE FOLLOWING MANNER -

1. THE PUMPS SHALL BE PROGRAMMED TO WORK ALTERNATELY SO AS TO ALLOW BOTH PUMPS TO HAVE EQUAL OPERATION LOAD & PUMP LIFE.
2. A LOW LEVEL FLOAT SHALL BE PROVIDED TO ENSURE THAT THE MINIMUM REQUIRED WATER LEVEL IS MAINTAINED WITHIN THE SUMP AREA OF THE BELOW GROUND TANK. IN THIS REGARD THIS FLOAT WILL FUNCTION AS AN OFF SWITCH FOR THE PUMPS.
3. A SECOND FLOAT SHALL BE PROVIDED AT A HIGHER LEVEL, APPROXIMATELY 300mm ABOVE THE MINIMUM WATER LEVEL, WHEREBY ONE OF THE PUMPS WILL OPERATE & DRAIN THE TANK TO THE LEVEL OF THE LOW LEVEL FLOAT.
4. A THIRD FLOAT SHALL BE PROVIDED AT A HIGH LEVEL, WHICH IS APPROXIMATELY THE ROOF LEVEL OF THE BELOW GROUND TANK. THIS FLOAT SHOULD START THE OTHER PUMP THAT IS NOT OPERATING & ACTIVATE THE ALARM.
5. AN ALARM SYSTEM SHALL BE PROVIDED WITH A FLASHING STROBE LIGHT & A PUMP FAILURE WARNING SIGN WHICH ARE TO BE LOCATED AT THE DRIVEWAY ENTRANCE TO THE BASEMENT LEVEL. THE ALARM SYSTEM SHALL BE PROVIDED WITH A BATTERY BACK-UP IN CASE OF POWER FAILURE.

PUMP WELL DETAILS

SUMP SIZE AND PUMP SIZE BASE ON 100 YEAR 2 HR STORM
INTENSITY IS 46.60mm/hr, AREA DRAINING TOWARDS SUMP IS 107m2
Q=CIA/3600 = 1.0x46.6x107/3600 =1.385L/ S
VOLUME REQUIRED IS 1.385x(2x60x60) =9972.4L
STORAGE PROVIDED 3000x3000x1200 = 10800L
THEREFORE ADEQUATE STORAGE PROVIDED
PUMP OUT RATE BASED ON 100YR 5MINS. STORM = 225mm/hr
Q=CIA/3600 = 1.0x225x107/3600 = 6.69L/s
USE KS 50 OR EQUIVALENT DUAL PUMPS TO BE INSTALLED IN SUMP AND CONNECTED TO CONTROL PANEL WHICH WILL ALLOW FOR THE PUMPS TO ACT ALTERNATIVELY AT 10L/s AT 10m HEAD

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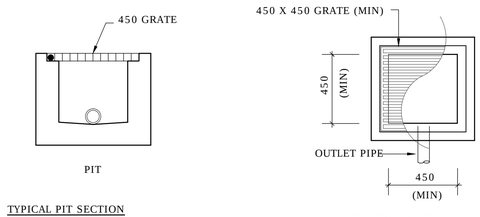
Type	Output		Outlet		Rated Head Capacity		Maximum Head Capacity		Weigh	Dimension		
	HP	kW	mm	Inch	M	LPM	M	LPM	Kg	L(mm)	W(mm)	H(mm)
KS-03	1/3	0.25	40	1 1/2"	3	130	8	180	9	188	141	305
KS-04	1/2	0.4	50	2"	5	150	8	220	11	208	140	359
KS-05	1/2	0.4	50	2"	5	160	10	260	14	230	156	375
KS-08	1	0.75	50	2"	6	240	13	380	21	290	180	425
KS-20	2	1.5	80	3"	10	300	16	600	31	278	182	475
KS-30	3	2.2	80	3"	10	500	18	800	42	390	250	450
KS-50	5	3.7	100	4"	10	800	21	1100	48	450	240	530
KS-75	7 1/2	5.6	100	4"	15	800	23	1300	60	550	310	590
KS-100	10	7.5	150	6"	18	900	25	1600	70	550	310	610

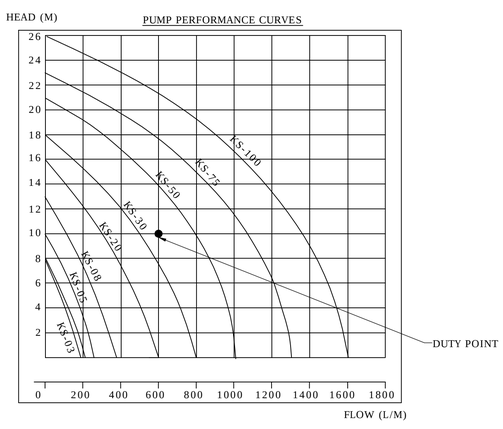
RECOMMENDED PUMP

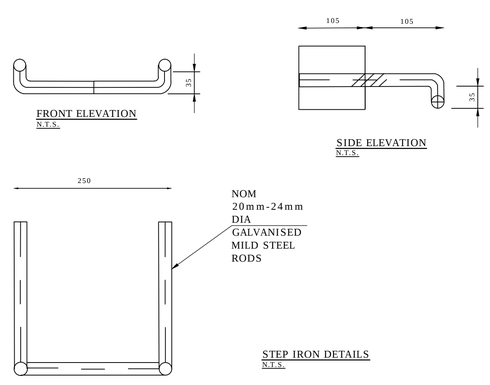


TYPICAL PIT SECTION
N.T.S.

STANDARD PIT
N.T.S.

TYPICAL SECTION THROUGH SUBSOIL HARD PIPE
N.T.S.





FRONT ELEVATION
N.T.S.

SIDE ELEVATION
N.T.S.

PLAN
N.T.S.

STEP IRON DETAILS
N.T.S.

NOTE: INSTALL WHERE PITS ARE DEEPER THAN 1000mm

COLOURS:

"DANGER" AND BACKGROUND	WHITE
ELLIPTICAL AREA	RED
RECTANGLE CONTAINING ELIPSE	BLACK
OTHER LETTERING AND BORDER	BLACK

MATERIALS POLYPROPYLENE

CONFINED SPACE WARNING SIGN
N.T.S.

WARNING

PUMP OUT SYSTEM FAILURE IN BASEMENT WHEN LIGHT IS FLASHING AND SIREN SOUNDING

BASEMENT PUMP OUT FAILURE WARNING SIGN

NOTE:-

1- SIGN SHALL BE PLACED IN A CLEAR AND VISIBLE LOCATION WHERE VEHICLES ENTER THE BASEMENT.

COLOURS :; -

WARNING - RED
BORDER AND OTHER COLOURING - BLACK

NOTE: A SUITABLE ALARM SYSTEM POSITIONED AT ENTRANCE OF BASEMENT CARPARK TO PROVIDE A FLOOD WARNING IN CASE OF PUMP FAILURE (TO COUNCILS SPEC). AS SHOWN ABOVE.

1:150@A1 0 1 2 3 4 5 6 7
1:200@A1 0 1 2 3 4 5 6 7 8 9 10
1:100@A1 0 1 2 3 4 5

NOT FOR CONSTRUCTION

No	AMENDMENT	ENG	DRAFT	DATE	No	AMENDMENT	ENG	DRAFT	DATE
A	FOR D.A. APPROVAL	N.L.	P.A.	18-07-18					

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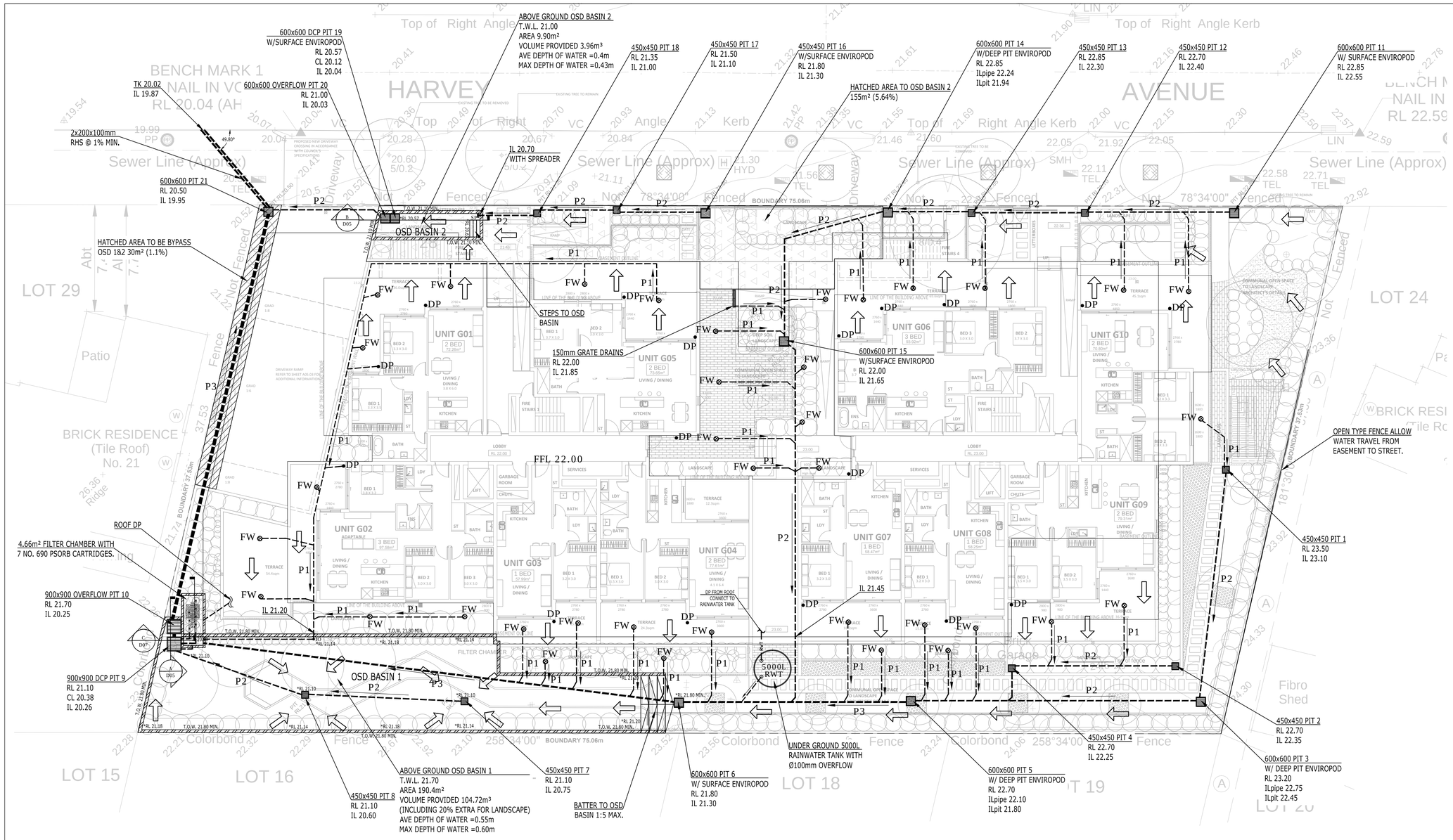
PROJECT
PROPOSED RESIDENTIAL FLAT BUILDING
23-29 HARVEY AVE,
MOOREBANK, NSW

CONSENT AUTHORITY:
LIVERPOOL CITY COUNCIL

N

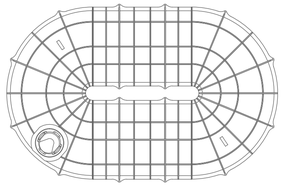
SHEET SUBJECT
BASEMENT STORMWATER DRAINAGE DETAILS

PROJECT 23-29 HARVEY AVE, MOOREBANK, NSW			
DATE JUL 18	DRAWN P.A.	DESIGNED N.L.	CHECKED N.L.
SCALE @ A1 N.T.S.		JOB No 18NL157	
AUTHORISED NERMEIN LOKA		DWG No D03	REV A



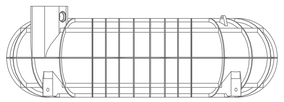
GROUND FLOOR/SITE STORMWATER DRAINAGE PLAN

SCALE 1:150



PLAN OF RAINWATER TANK
N.T.S.

DENOTES RAINWATER TANK
MANUTFACTURER- TANKMASTA TOROID UNDERGROUND TANK
MODEL - BAGEL
TANK SHALL BE INSTALLED TO MANUFACTURERS SPECIFICATIONS AND CONNECTED AS PER BASIX REQUIREMENTS DETERMINED BY OTHERS.



SIDE VIEW OF RAINWATER TANK
N.T.S.

1:150@A1 0 1 2 3 4 5 6 7
1:200@A1 0 1 2 3 4 5 6 7 8 9 10
1:100@A1 0 1 2 3 4 5

NOT FOR CONSTRUCTION

NOTE RE. SERVICES

APPROXIMATE LOCATIONS OF EXISTING SERVICES SHOWN ON LONGITUDINAL SECTION. EXACT LOCATIONS & DEPTHS TO BE ACCURATELY LOCATED BY BUILDER CONTRACTOR BY CONTACTING THE RELEVANT AUTHORTIES BEFORE COMMENCEMENT OF ANY WORKS

DIAL 1100 BEFORE YOU DIG

NOTES

1. ALL LINES ARE TO BE MIN. 100Ø UPVC @ MIN 1.0% GRADE UNLESS NOTED OTHERWISE.
2. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE & LEVEL ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY EARTHWORKS. ALL DESIGN LEVELS SHOWN ON PLAN SHALL BE VERIFIED ON SITE PRIOR TO THE COMMENCEMENT OF ANY WORK.
3. ALL PIPES TO HAVE MIN 200mm COVER IF LOCATED WITHIN PROPERTY.
4. ALL PITS IN DRIVEWAYS BE HEAVY DUTY GRATES. DIRECT SURFACE FLOW TO ALL GRATED SURFACE INLET PITS.
5. ALL WORK DO BE DONE IN ACCORDANCE WITH AS/NZ 3500.3.2:2003 AND COUNCIL SPECIFICATIONS.
6. LOCATION OF DOWNPIPES & FLOOR WASTES ARE INDICATIVE ONLY. DOWNPIPE & FLOOR WASTE SIZE, LOCATION & QUANTITY TO BE DETERMINED BY BUILDER & IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS.
7. THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, LANDSCAPE AND STRUCTURAL PLANS.
8. ANY DISCREPANCIES OR OMISSIONS SHALL BE REFERRED TO THE DESIGN ENGINEER FOR RESOLUTION.
9. ALL PITS OR GRATES IN TRAFFICABLE AREAS TO BE HEAVY DUTY.
10. ALL GUTTERS WILL BE FITTED WITH LEAF GUARDS AND SHOULD BE INSPECTED AND CLEANED TO ENSURE LEAF LITTER CANNOT ENTER THE DOWNPIPES

SYMBOLS

F.F.L.	FINISHED FLOOR LEVEL
T.K.	TOP OF KERB
RL	PIT SURFACE LEVEL
IL	INVERT LEVEL
— SSD —	SUBSOIL DRAINAGE PIPE
- - -	STORMWATER DRAINAGE PIPE
—·—·—	DOWNPIPE TO RAINWATER TANK
• DP	100Ø DOWN PIPE (U.N.O.)
• VD	VERTICAL DROP PIPE
• VR	VERTICAL RISER
• IO	INSPECTION OPENING
	MASONRY RETAINING WALL
• FW	FLOOR WASTE 150Ø
• DDO	DISH DRAIN OUTLET 100Ø
	GRATED INLET PIT
	GRATED DRAIN
	OVERLAND FLOW PATH
SP	SPREADER
ES	EMERGENCY SPITTER

DP : 100Ø DOWN PIPE U.N.O.
- - - - - - - - : STORMWATER PIPE @1% MIN. U.N.O.
REFER TO AS.3500 PART 3 TABLE 7.2
P1 : 100Ø UPVC PIPE AT 1.0% MIN. GRADE
P2 : 150Ø UPVC PIPE AT 1.0% MIN. GRADE
P3 : 225Ø UPVC PIPE AT 0.5% MIN. GRADE

NOTES: DRAINAGE LINES

DRAINAGE LINES SHOWN continuous — — — —
TO COLLECT SURFACE WATER

DRAINAGE LINES SHOWN DASHED —— RWT ——
TO COLLECT ROOF WATER ONLY TO RAINWATER TANK

NOTE:
ROOF DOWN PIPES TO BE CONNECTED INTO OSD 1 FURTHER DETAILS AT C.C. STAGE.

NOTES: COUNCIL ISSUED FOOTWAY DESIGN LEVELS

COUNCIL'S ISSUED FOOTWAY DESIGN LEVELS TO BE INCORPORATED INTO THE FINISHED LEVELS ONCE ISSUED BY COUNCIL

NOTES: ROAD RESERVE & FOOTWAY DRAINAGE ELEMENTS

ALL STORMWATER DRAINAGE ELEMENTS PROPOSED WITHIN THE ROAD RESERVE AND FOOTWAY SHALL BE CONSTRUCTED UNDER THE SUPERVISION AND TO THE SATISFACTION OF COUNCIL'S ENGINEER.

No	AMENDMENT	ENG	DRAFT	DATE	No	AMENDMENT	ENG	DRAFT	DATE
B	FOR D.A. APPROVAL	N.L.	J.P.	24-04-19					
A	FOR D.A. APPROVAL	N.L.	P.A.	18-07-18					

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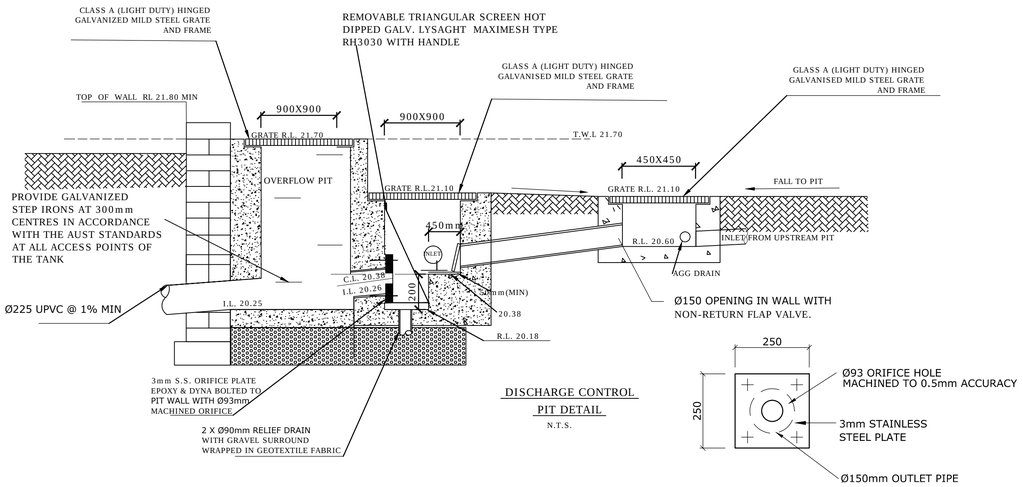
PROJECT
PROPOSED RESIDENTIAL FLAT BUILDING
23-29 HARVEY AVE,
MOOREBANK, NSW

CONSENT AUTHORITY:
LIVERPOOL CITY COUNCIL

N

SHEET SUBJECT
GROUND FLOOR / SITE STORMWATER DRAINAGE PLAN

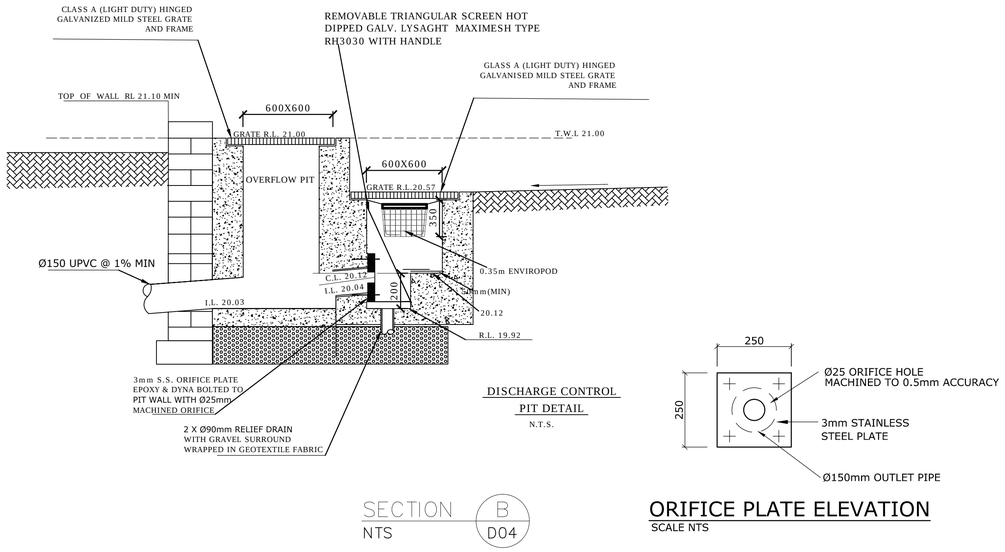
PROJECT 23-29 HARVEY AVE, MOOREBANK, NSW			
DATE APR 19	DRAWN J.P.	DESIGNED N.L.	CHECKED N.L.
SCALE @ A1 AS SHOWN		JOB No 18NL157	
AUTHORISED NERMEIN LOKA		DWG No D04	REV B



SECTION A
NTS D04

ORIFICE PLATE ELEVATION
SCALE NTS

TYPICAL SECTION THROUGH OSD OUTLET



SECTION B
NTS D04

ORIFICE PLATE ELEVATION
SCALE NTS

TYPICAL SECTION THROUGH OSD OUTLET

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DIAL 1100 BEFORE YOU DIG

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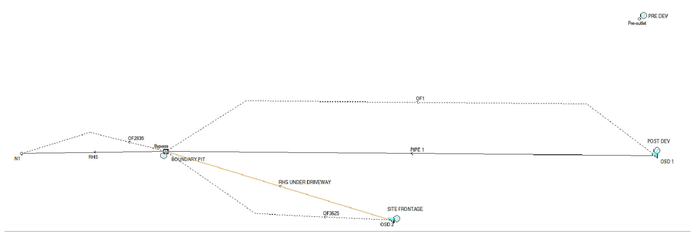
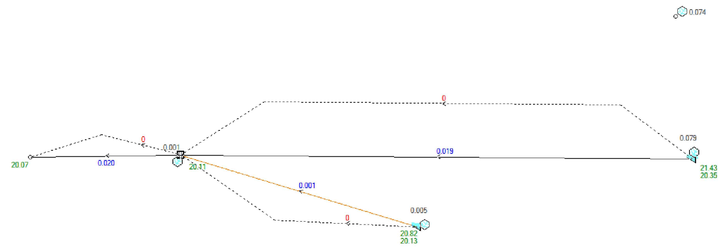
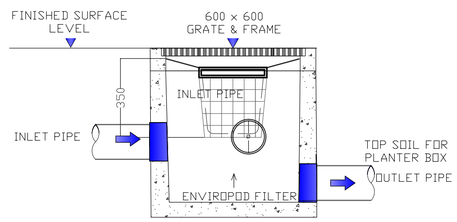


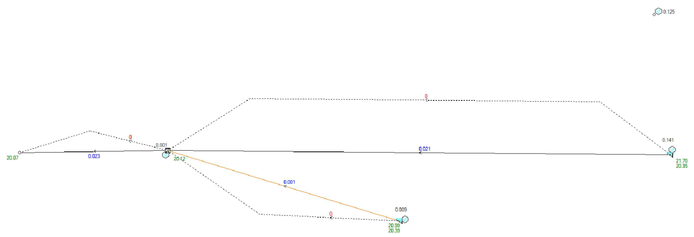
DRAINS MODEL



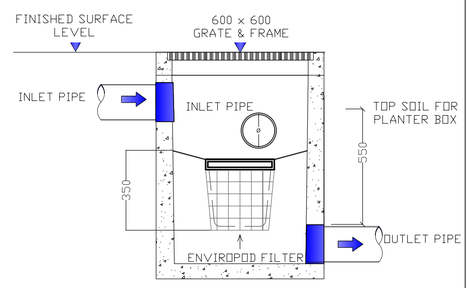
DRAINS 10 YEARS 1HR = 20L/S TO K&G



SURFACE ENVIROPOD CONFIGURATION SECTION



DRAINS MAJOR



DEEP PIT ENVIROPOD CONFIGURATION SECTION

ABOVE GROUND OSD BASIN 1 WARNING SIGN
NTS

ABOVE GROUND OSD BASIN 1 WARNING SIGN
NTS

COLOURS:

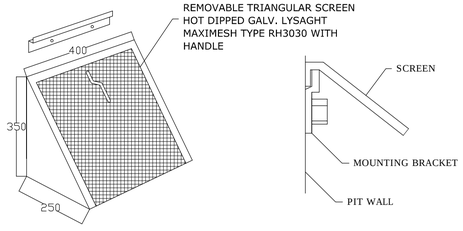
TRIANGLE AND "WARNING"	RED
WATER	BLUE
FIGURE AND OTHER LETTERING	BLACK
MATERIALS	POLYPROPYLENE

PROVIDE OSD SIGN ADJACENT TO THE ON-SITE DETENTION SYSTEM IN A CLEAR AND VISIBLE POSITION IN ACCORDANCE WITH THE UPPER PARRAMATTA RIVER CATCHMENT TRUST REQUIREMENTS

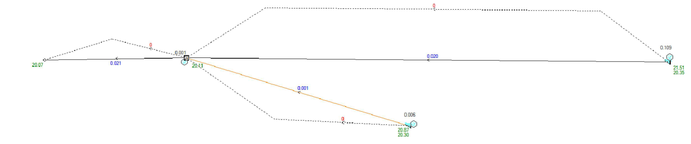
COLOURS:

TRIANGLE AND "WARNING"	RED
WATER	BLUE
FIGURE AND OTHER LETTERING	BLACK
MATERIALS	POLYPROPYLENE

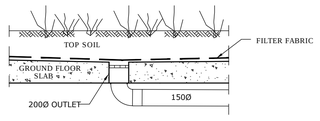
PROVIDE OSD SIGN ADJACENT TO THE ON-SITE DETENTION SYSTEM IN A CLEAR AND VISIBLE POSITION IN ACCORDANCE WITH THE UPPER PARRAMATTA RIVER CATCHMENT TRUST REQUIREMENTS



MULTI PURPOSE FILTER SCREEN
N.T.S.
PRODUCT CODE: MMMPS (MASCOT ENGINEERING)

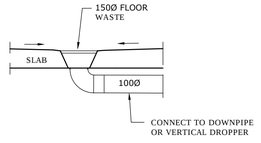


DRAINS MINOR



TYPICAL LANDSCAPING AREA FLOOR WASTE DETAIL
N.T.S.

NOTE - ALL PLANTING AREAS OVER BASEMENT TO HAVE ADEQUATE FLOOR WASTES INSTALLED



TYPICAL FLOOR WASTE 'FW' DETAIL
SCALE NTS

1:150@A1
1:200@A1
1:100@A1

NOT FOR CONSTRUCTION

No	AMENDMENT	ENG	DRAFT	DATE	No	AMENDMENT	ENG	DRAFT	DATE
A	FOR D.A. APPROVAL	N.L.	P.A.	18-07-18					

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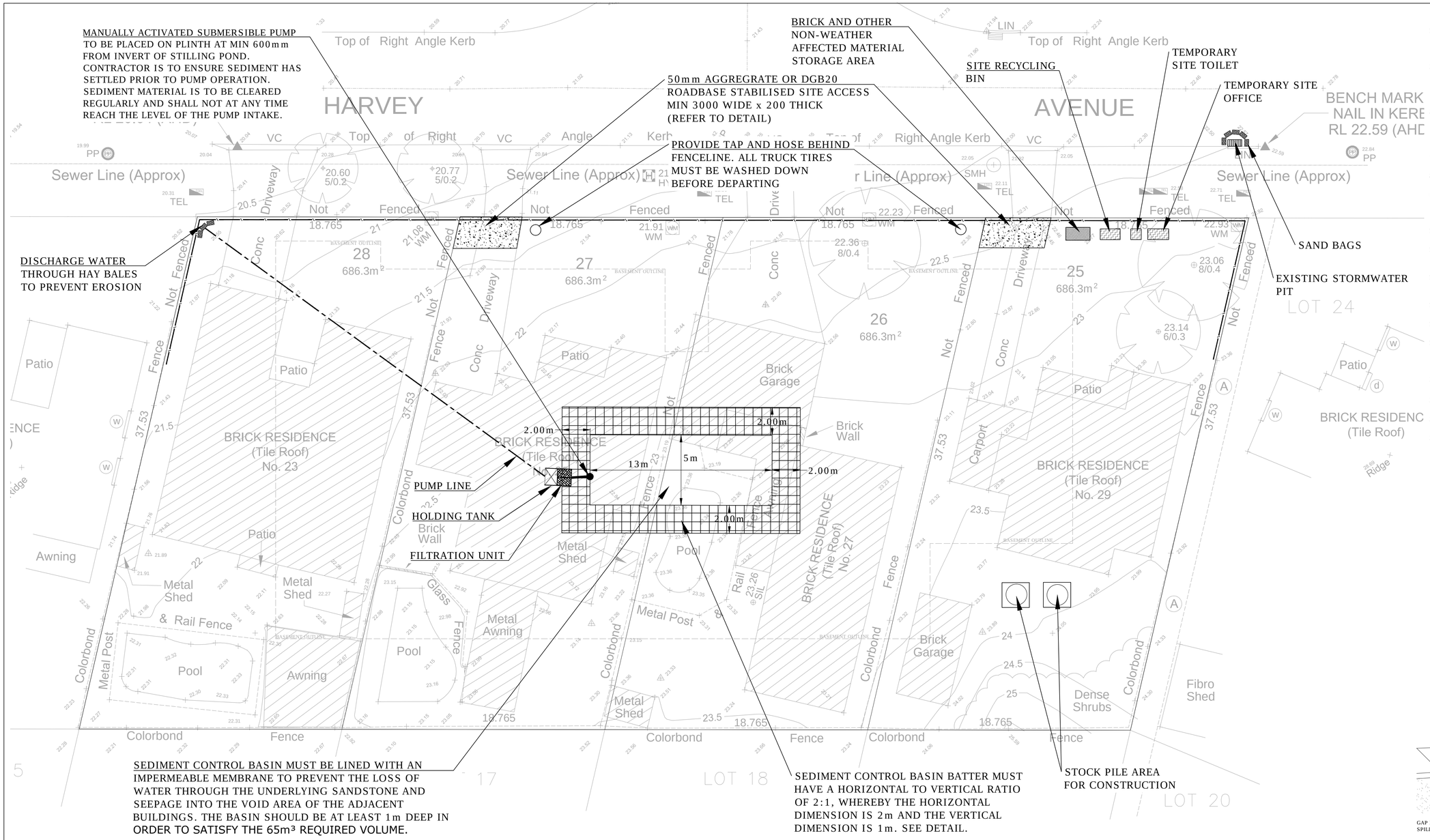
PROJECT
PROPOSED RESIDENTIAL FLAT BUILDING
23-29 HARVEY AVE,
MOORBANK, NSW

CONSENT AUTHORITY:
LIVERPOOL CITY COUNCIL

N

SHEET SUBJECT
SITE STORMWATER DRAINAGE DETAILS

PROJECT 23-29 HARVEY AVE, MOOREBANK, NSW			
DATE JUL 18	DRAWN P.A.	DESIGNED N.L.	CHECKED N.L.
SCALE @ A1 N.T.S.		JOB No 18NL157	
AUTHORISED NERMEIN LOKA		DWG No D05	REV A



EROSION CONTROL NOTES

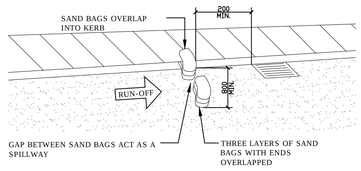
1. ALL EROSION & SEDIMENT CONTROL MEASURES ARE TO BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH 'MANAGING URBAN STORMWATER, 3RD EDITION' PRODUCED BY THE NSW DEPARTMENT OF HOUSING.
2. ALL EROSION AND SILTATION CONTROL DEVICES ARE TO BE PLACED PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION WORKS, AND ALL SILT TRAPS ARE TO HAVE DEPOSITED SILT REMOVED REGULARLY DURING CONSTRUCTION.
3. ALL TRESS ARE TO BE PRESERVED UNLESS INDICATED OTHERWISE ON THE ARCHITECT'S OR LANDSCAPE ARCHITECT'S DRAWINGS. EXISTING GRASS COVER SHALL BE MAINTAINED EXPECT IN AREAS CLEARED FOR BUILDINGS, PAVEMENTS, ETC.
4. STABILISE/REVEGATATE ALL DISTURBED AREAS PROGRESSIVELY WHERE PRACTICAL.
5. INSTALL TEMPORARY SEDIMENT BARRIERS TO ALL INLET PITS LIKELY TO COLLECT SILT LADEN WATER.
6. ADDITIONAL VEHICLES MUST PARK ON ROAD AND NOT FOOTPATH. PUBLIC FOOTPATH ADJACENT TO SITE MUST NOT BE OBSTRUCTED AND MUST BE SAFE FOR PEDESTRIAN ACCESS.
14. ENSURE FENCE IS KEYED AT BOTH ENDS INTO GROUND, WITH BASE TURNED UPSLOPE.
15. WHERE SEDIMENT FENCE IS NEAR STREET, ERECT FENCE WITHIN DEVELOPMENT SIDE OF TURF FILTER STRIPS AND PROPERTY BOUNDARY.
16. SEDIMENT FENCE FILTER CLOTH TO BE FASTENED SECURELY TO WIRE FENCE WITH TIES SPACED EVERY 600MM.OVERLAP ADJOINING FILTER CLOTH BY 150MM AND FOLDING OVER.
17. DIVERT UPSLOPE WATER AROUND WORK SITE AND STABILISE CHANNELS.
18. LAY KERB-SIDE TURF FILTER STRIP TO TRAP EXCESS SEDIMENT.
19. CONTAMINATED WATER WITH SEDIMENT FROM A SEDIMENT BASIN OR EXCAVATION PIT IS TO BE FLOCCULATED/ FILTERED TO LOWER SUSPENDED SOIL LOAD TO LESS THAN 50 MILLIGRAMS PER LITRE.
20. SOIL, SAND AND GRAVEL ARE NOT TO BE STOCKPILED ON ROADWAYS OR IN DRAINAGE AREAS.
21. WASH AREA MUST BE SLIGHTLY DEPRESSED TO COLLECT WASTE MATERIAL.
22. APPLY DUST CONTROL MEASURES TO REDUCE SURFACE AND AIRBORNE MOVEMENT OF SEDIMENT
23. NOT WITHSTANDING DETAILS SHOWN, IT IS THE CONTRACTORS SOLE RESPONSIBILITY TO ENSURE THAT ALL SITE ACTIVITIES COMPLY WITH THE REQUIREMENTS OF THE CLEAN WATERS ACT.

SYMBOLS

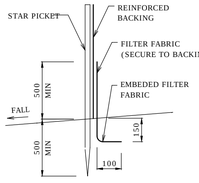
- EXISTING CONTOURS
- SILT FENCE
- WIRE MESH FENCE
- STABILISED SITE ACCESS
- Ø50 PUMP LINE

NOTES: SOIL & WATER MANAGEMENT

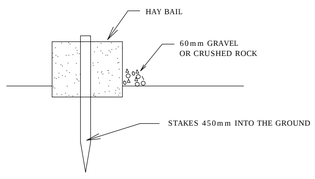
1. ALL EROSION AND SEDIMENT CONTROL MEASURES TO BE INSPECTED, MAINTAINED AND LOGGED DAILY BY SITE MANAGER.
2. MINIMISE DISTURBED AREAS.
3. ALL STOCKPILES TO BE CLEAR FROM DRAINS, GUTTERS AND FOOTPATHS.
4. NO MATERIAL TO BE STORED ON FOOTPATH.
5. STOCKPILE LASTING LONGER THAN 40 DAYS MUST BE COVERED.
6. DRAINAGE IS TO BE CONNECTED TO STORMWATER SYSTEM AS SOON AS POSSIBLE.
7. ROADS AND FOOTPATH TO BE SWEPT DAILY.
8. ENSURE NEIGHBOURING PROPERTY IS NOT FLOODED.
9. IF YOU DO NOT COMPLY, YOU MAY BE LIABLE TO A $1500 FINE.



SANDBAG KERB INLET SEDIMENT TRAP
NTS



SILT FENCE DETAIL



HAY BAIL DETAIL

TO BE USED AS REQUIRED

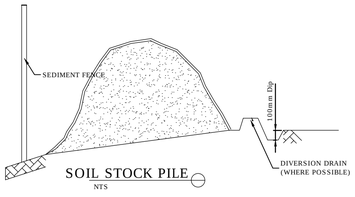
1:150@A1 0 1 2 3 4 5 6 7
1:200@A1 0 1 2 3 4 5 6 7 8 9 10
1:100@A1 0 1 2 3 4 5

NOT FOR CONSTRUCTION

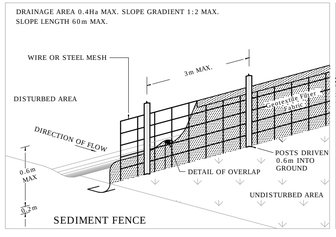
SOIL & WATER MANAGEMENT PLAN

SCALE 1:150

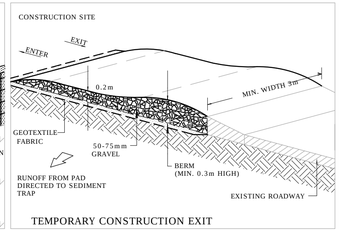
NOTE:
ALL EXISTING BUILDINGS TO BE DEMOLISHED ON SITE.
ALL EXISTING PITS TO BE COVERED DURING DEMOLITION



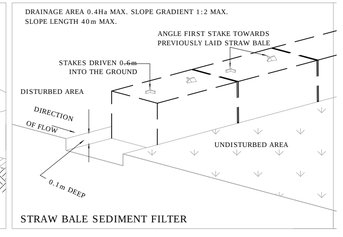
SOIL STOCK PILE
NTS



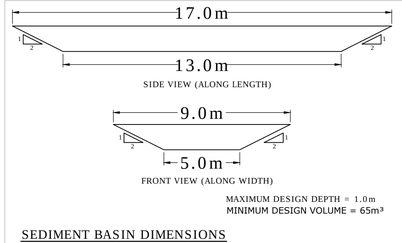
SEDIMENT FENCE



TEMPORARY CONSTRUCTION EXIT



STRAW BALE SEDIMENT FILTER



SEDIMENT BASIN DIMENSIONS
NTS

No	AMENDMENT	ENG	DRAFT	DATE	No	AMENDMENT	ENG	DRAFT	DATE
A	FOR D.A. APPROVAL	N.L.	P.A.	18-07-18					

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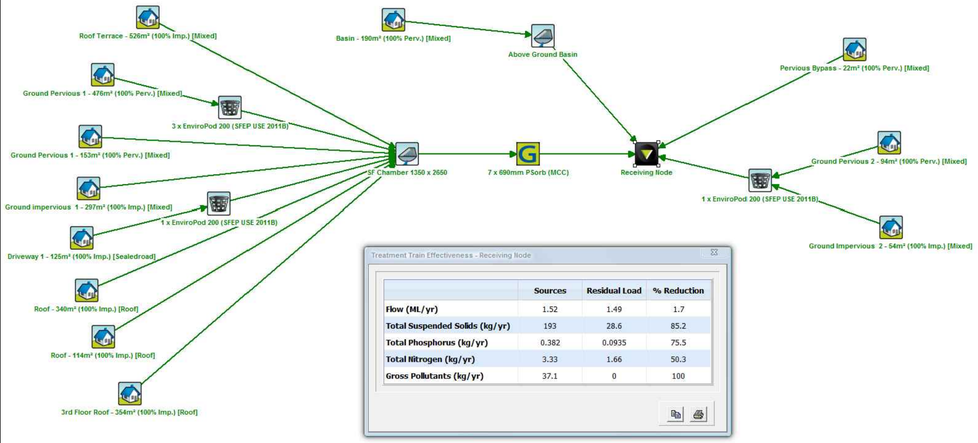
PROJECT
PROPOSED RESIDENTIAL FLAT BUILDING
23-29 HARVEY AVE,
MOORE BANK, NSW

CONSENT AUTHORITY:
LIVERPOOL CITY COUNCIL

N

SHEET SUBJECT
SOIL & WATER MANAGEMENT PLAN AND DETAILS

PROJECT	23-29 HARVEY AVE, MOOREBANK, NSW		
DATE JUL 18	DRAWN P.A.	DESIGNED N.L.	CHECKED N.L.
SCALE @ A1 AS SHOWN		JOB No 18NL157	
AUTHORISED NERMEIN LOKA		DWG No D06	REV A



	Sources	Residual Load	% Reduction
Flow (ML/yr)	1.52	1.49	1.7
Total Suspended Solids (kg/yr)	193	28.6	85.2
Total Phosphorus (kg/yr)	0.382	0.0935	75.5
Total Nitrogen (kg/yr)	3.33	1.66	50.3
Gross Pollutants (kg/yr)	37.1	0	100

MUSIC MODELING RESULT

STORMWATER TREATMENT SUMMARY

SITE AREA = 1545m²

"MUSIC" HAS BEEN USED FOR WATER QUALITY TREATMENT ANALYSIS

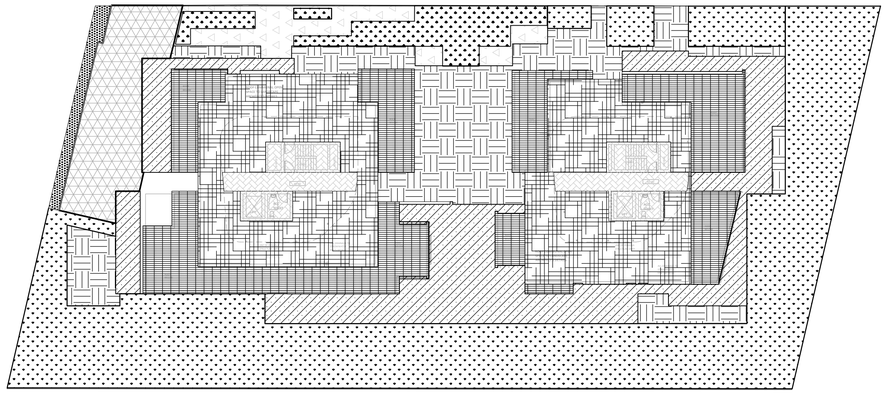
AS PER YOUR REQUEST PLEASE SEE STORMWATER360'S TREATMENT DESIGN FOR THE ABOVE MENTIONED SITE. THE CATCHMENT IN MUSIC IS MODELLED IN ACCORDANCE WITH THE FOLLOWING GUIDELINES & PARAMETERS:

- MUSIC VERSION 6.3
- SF CHAMBER NODE MODELLED WITH 'K' VALUES SET TO 1
- RAINFALL STATION 67035 LIVERPOOL(WHITLAM), 6 MINUTE TIME STEP FROM 1967 To 1976 MODIFIED SPECIFICALLY FOR LIVERPOOL CITY COUNCIL
- LIVERPOOL SOURCE NODE(S) UTILIZING MODIFIED % IMPERVIOUS AREA, RAINFALL THRESHOLD, SOIL PROPERTIES & POLLUTANT CONCENTRATIONS
- NO DRAINAGE ROUTING BETWEEN NODES.

THE SYSTEM HAS BEEN MODELLED TO MEET THE LIVERPOOL CITY COUNCIL DCP (2014) TARGET

TSS: 85% REDUCTION
TP: 65% REDUCTION
TN: 45% REDUCTION

TREATMENT DEVICES:
1. 7-CARTRIDGE (690mm PSORB) STORMFILTER DETENTION SYSTEM INCLUDING PRE-CAST COMPONENTS BY STORMWATER 360
2. 5-NO. ENVIROPODS SERIES 200 FILTERS BY STORMWATER 360.



TOTAL SITE AREA = 2745m²

BYPASS AREA = 22m²

ROOF FLOOR TRAFFICABLE ROOF AREA = 526m²

3RD FLOOR NON-TRAFFICABLE ROOF AREA = 354m²

GROUND FLOOR LANDSCAPE AREA TO OSD 1= 819m²

GROUND FLOOR HARD PAVED AREA TO OSD 1 = 290m²

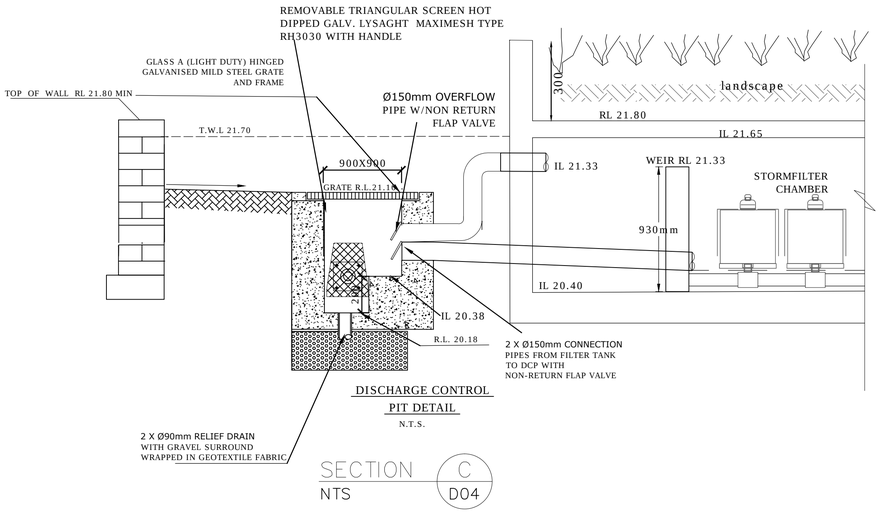
DRIVEWAY AREA TO OSD 1 = 125m²

ROOF FLOOR NON-TRAFFICABLE ROOF AREA = 340m²

ROOF FLOOR NON-TRAFFICABLE ROOF AREA = 114m²

GROUND FLOOR HARDPAVED AREA TO OSD 2= 66m²

GROUND FLOOR LANDSCAPE AREA TO OSD 2= 89m²



TYPICAL SECTION THROUGH OSD OUTLET

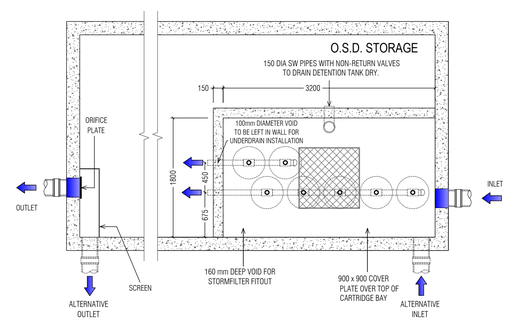
STORMFILTER DESIGN TABLE

- THE 3.2 x 1.8m STORMFILTER TREATMENT CAPACITY VARIES BY NUMBER OF FILTER CARTRIDGES INSTALLED AND BY REGION SPECIFIC INTERNAL FLOW CONTROLS.
- THE STANDARD CONFIGURATION IS SHOWN. ACTUAL CONFIGURATION OF THE SPECIFIED STRUCTURE(S) PER CIVIL ENGINEER WILL BE SHOWN ON SUBMITTAL DRAWING(S).
- ALL PARTS PROVIDED AND INTERNAL ASSEMBLY BY STORMWATER360 UNLESS OTHERWISE NOTED.

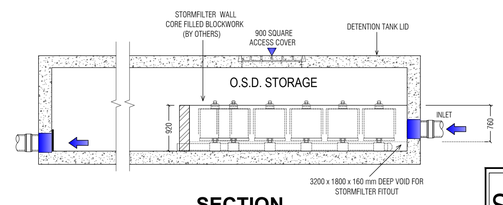
CARTRIDGE HEIGHT	690		460		310	
SYSTEM HYDRAULIC DROP (H - REQ'D. MIN.)	930		700		550	
TREATMENT BY MEDIA SURFACE AREA L/S/m2	1.4	0.7	1.4	0.7	1.4	0.7
CARTRIDGE FLOW RATE (L/s)	1.42	0.71	0.95	0.47	0.63	0.32

GENERAL NOTES

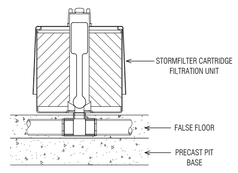
1. INLET AND OUTLET PIPING SHALL BE SPECIFIED BY SITE CIVIL ENGINEER (SEE PLANS) AND PROVIDED BY CONTRACTOR. STORMFILTER IS PROVIDED WITH OPENINGS AT INLET AND OUTLET LOCATIONS.
2. IF THE PEAK FLOW RATE, AS DETERMINED BY THE SITE CIVIL ENGINEER, EXCEEDS THE PEAK HYDRAULIC CAPACITY OF THE PRODUCT, AN UPSTREAM BYPASS STRUCTURE IS REQUIRED. PLEASE CONTACT STORMWATER360 FOR OPTIONS.
3. THE FILTER CARTRIDGE(S) ARE SIPHON-ACTUATED AND SELF-CLEANING. THE STANDARD DETAIL DRAWING SHOWS THE MAXIMUM NUMBER OF CARTRIDGES. THE ACTUAL NUMBER SHALL BE SPECIFIED BY THE SITE CIVIL ENGINEER ON SITE PLANS OR IN DATA TABLE BELOW. CONCRETE STRUCTURE TO BE PROVIDED BY OTHERS.
4. SEE STORMFILTER DESIGN TABLE FOR REQUIRED HYDRAULIC DROP. FOR SHALLOW, LOW DROP OR SPECIAL DESIGN CONSTRAINTS, CONTACT STORMWATER360 FOR DESIGN OPTIONS.
5. ALL WATER QUALITY PRODUCTS REQUIRE PERIODIC MAINTENANCE AS OUTLINED IN THE O&M GUIDELINES. PROVIDE MINIMUM CLEARANCE FOR MAINTENANCE ACCESS.
6. STRUCTURE AND ACCESS COVERS DESIGNED BY OTHERS. ACCESS COVERS TO BE A MINIMUM 900X900 ABOVE CARTRIDGES.
7. THE STRUCTURE THICKNESSES SHOWN ARE FOR REPRESENTATIONAL PURPOSES AND VARY REGIONALLY.
8. ANY BACKFILL DEPTH, SUB-BASE, AND OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY SITE CIVIL ENGINEER.
9. CARTRIDGE HEIGHT AND ASSOCIATED DESIGN PARAMETERS PER STORMFILTER DESIGN TABLE.
10. STORMFILTER BY STORMWATER360: SYDNEY (AU) PHONE: 1300 354 722 www.stormwater360.com.au



PLAN LAYOUT



SECTION



STORMFILTER CARTRIDGE DETAIL

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID			
WATER QUALITY FLOW RATE (L/S)			
PEAK FLOW RATE (L/S)			
RETURN PERIOD OF PEAK FLOW (yrs)			
# OF CARTRIDGES REQUIRED			
CARTRIDGE HEIGHT (310, 460 or 690mm)			
MEDIA TYPE (PERLITE, PERLITE/ZEOLITE OR ZPG)			
PRECAST VAULT WEIGHT	- kg		
PRECAST LID WEIGHT	- kg		
PIPE DATA:	I.L.	MATERIAL	DIAMETER
INLET PIPE #1			
INLET PIPE #2			
OUTLET PIPE			
RIM RLs			
LADDER			
ANTI-FLOTATION BALLAST	XXX	XXX	
NOTES/SPECIAL REQUIREMENTS:			

FLOW

SUMMARY:

THE PROPOSED STORMWATER QUALITY TREATMENT TRAIN ARE COMPRISES OF 7-CARTRIDGE (690mm PSORB) STORMFILTER DETENTION SYSTEM & 5 ENVIROPODS (SERIES 200) TO REMOVE DIFFERENT SOURCE POLLUTANTS. IT IS OUR OPINION THAT IF THESE MEASURES ARE IMPLEMENTED, THE PROPOSED DEVELOPMENT WILL COMPLY WITH THE INTENT OF LIVERPOOL CITY COUNCIL REQUIREMENT. IN ADDITION, THE PROPOSED STORMWATER QUALITY TREATMENT TRAIN SHALL BE MAINTAINED AND SERVICES BY THE OWNERS OF THE PROPOSED DEVELOPMENT AT NO COST TO COUNCIL.

1:150@A1 0 1 2 3 4 5 6 7
1:200@A1 0 1 2 3 4 5 6 7 8 9 10
1:100@A1 0 1 2 3 4 5

NOT FOR CONSTRUCTION

Stormwater360

STORMWATER360
STORMFILTER DETENTION TANK
7 CARTRIDGE STORMFILTER SYSTEM
FIRST FLUSH GENERAL ARRANGEMENT

DRAWING 1 A

DATE: FILE NAME: DRN: CHK:

STORMFILTER TANK DETAILS FOR PRODUCT REFERENCE ONLY

No	AMENDMENT	ENG	DRAFT	DATE	No	AMENDMENT	ENG	DRAFT	DATE
A	FOR D.A. APPROVAL	N.L.	P.A.	25-07-18					

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PROJECT
PROPOSED RESIDENTIAL FLAT BUILDING
23-29 HARVEY AVE,
MOORBANK, NSW

CONSENT AUTHORITY:
LIVERPOOL CITY COUNCIL

N

SHEET SUBJECT
MUSIC RESULT AND DETIALS

PROJECT 23-29 HARVEY AVE, MOOREBANK, NSW			
DATE JUL 18	DRAWN P.A.	DESIGNED N.L.	CHECKED N.L.
SCALE @ A1 NTS		JOB No 18NL157	
AUTHORISED NERMEIN LOKA		DWG No D07	REV A

LIVERPOOL CITY COUNCIL

music link

MUSIC-*link* Report

Project Details		Company Details	
Project:	23-29 Harvey Ave Moorbank	**Company:**	Loka Consulting Engineers P/L
Report Export Date:	25/07/2018	**Contact:**	Lesley Ye
Catchment Name:	11040 - 23-29 Harvey Ave	**Address:**	14a/8 Ave of the Americas, Newington
Catchment Area:	0.274ha	**Phone:**	02 8065 9689
Impervious Area*:	66.05%	**Email:**	civil3@Lceng.com.au
Rainfall Station:	67035 LIVERPOOL(WHITLAM		
Modelling Time-step:	6 Minutes		
Modelling Period:	1/01/1967 - 31/12/1976 11:54:00 PM		
Mean Annual Rainfall:	857mm		
Evapotranspiration:	1171mm		
MUSIC Version:	6.3.0		
MUSIC-link data Version:	6.31		
Study Area:	Liverpool Clay Soil		
Scenario:	Liverpool Development		

* takes into account area from all source nodes that link to the chosen reporting node, excluding Import Data Nodes

Treatment Train Effectiveness		Treatment Nodes		Source Nodes	
Node: Receiving Node	**Reduction**	**Node Type**	**Number**	**Node Type**	**Number**
Flow	1.74%	Sedimentation Basin Node	2	Urban Source Node	12
TSS	85.5%	GPT Node	3		
TP	75.7%	Generic Node	1		
TN	50.3%				
GP	100%				

Comments

7 Cartridge StormFilter Detention System

NOTE: A successful self-validation check of your model does not constitute an approved model by Liverpool City Council
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Passing Parameters

Node Type	Node Name	Parameter	Min	Max	Actual
GPT	1 x EnviroPod 200 (SFEP USE 2011B)	Hi-flow bypass rate (cum/sec)	None	99	0.02
GPT	1 x EnviroPod 200 (SFEP USE 2011B)	Hi-flow bypass rate (cum/sec)	None	99	0.02
GPT	3 x EnviroPod 200 (SFEP USE 2011B)	Hi-flow bypass rate (cum/sec)	None	99	0.06
Receiving	Receiving Node	% Load Reduction	None	None	1.74
Receiving	Receiving Node	GP % Load Reduction	90	None	100
Receiving	Receiving Node	TN % Load Reduction	45	None	50.3
Receiving	Receiving Node	TP % Load Reduction	65	None	75.7
Receiving	Receiving Node	TSS % Load Reduction	85	None	85.5
Sedimentation	Above Ground Basin	% Reuse Demand Met	None	None	0
Sedimentation	Above Ground Basin	Exfiltration Rate (mm/hr)	0	0	0
Sedimentation	Above Ground Basin	Extended detention depth (m)	0.25	1	0.55
Sedimentation	Above Ground Basin	High Flow Bypass Out (ML/yr)	None	None	0
Sedimentation	SF Chamber 1350 x 2650	% Reuse Demand Met	None	None	0
Sedimentation	SF Chamber 1350 x 2650	Exfiltration Rate (mm/hr)	0	0	0
Sedimentation	SF Chamber 1350 x 2650	Extended detention depth (m)	0.25	1	0.77
Sedimentation	SF Chamber 1350 x 2650	High Flow Bypass Out (ML/yr)	None	None	0
Urban	3rd Floor Roof - 354m^2 (100% Imp.)	Area Impervious (ha)	None	None	0.035
Urban	3rd Floor Roof - 354m^2 (100% Imp.)	Area Pervious (ha)	None	None	0
Urban	3rd Floor Roof - 354m^2 (100% Imp.)	Total Area (ha)	None	None	0.035
Urban	Basin - 190m^2 (100% Perv.)	Area Impervious (ha)	None	None	0
Urban	Basin - 190m^2 (100% Perv.)	Area Pervious (ha)	None	None	0.019
Urban	Basin - 190m^2 (100% Perv.)	Total Area (ha)	None	None	0.019
Urban	Driveway 1 - 125m^2 (100% Imp.)	Area Impervious (ha)	None	None	0.013
Urban	Driveway 1 - 125m^2 (100% Imp.)	Area Pervious (ha)	None	None	0
Urban	Driveway 1 - 125m^2 (100% Imp.)	Total Area (ha)	None	None	0.013
Urban	Ground impervious 1 - 297m^2 (100% Imp.)	Area Impervious (ha)	None	None	0.03
Urban	Ground impervious 1 - 297m^2 (100% Imp.)	Area Pervious (ha)	None	None	0
Urban	Ground impervious 1 - 297m^2 (100% Imp.)	Total Area (ha)	None	None	0.03
Urban	Ground Impervious 2 - 54m^2 (100% Imp.)	Area Impervious (ha)	None	None	0.005
Urban	Ground Impervious 2 - 54m^2 (100% Imp.)	Area Pervious (ha)	None	None	0
Urban	Ground Impervious 2 - 54m^2 (100% Imp.)	Total Area (ha)	None	None	0.005
Urban	Ground Pervious 1 - 153m^2 (100% Perv.)	Area Impervious (ha)	None	None	0
Urban	Ground Pervious 1 - 153m^2 (100% Perv.)	Area Pervious (ha)	None	None	0.015
Urban	Ground Pervious 1 - 153m^2 (100% Perv.)	Total Area (ha)	None	None	0.015
Urban	Ground Pervious 1 - 476m^2 (100% Perv.)	Area Impervious (ha)	None	None	0
Urban	Ground Pervious 1 - 476m^2 (100% Perv.)	Area Pervious (ha)	None	None	0.048
Urban	Ground Pervious 1 - 476m^2 (100% Perv.)	Total Area (ha)	None	None	0.048
Urban	Ground Pervious 2 - 94m^2 (100% Perv.)	Area Impervious (ha)	None	None	0
Urban	Ground Pervious 2 - 94m^2 (100% Perv.)	Area Pervious (ha)	None	None	0.009
Urban	Ground Pervious 2 - 94m^2 (100% Perv.)	Total Area (ha)	None	None	0.009

Only certain parameters are reported when they pass validation

NOTE: A successful self-validation check of your model does not constitute an approved model by Liverpool City Council
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Node Type	Node Name	Parameter	Min	Max	Actual
Urban	Pervious Bypass - 22m^2 (100% Perv.)	Area Impervious (ha)	None	None	0
Urban	Pervious Bypass - 22m^2 (100% Perv.)	Area Pervious (ha)	None	None	0.002
Urban	Pervious Bypass - 22m^2 (100% Perv.)	Total Area (ha)	None	None	0.002
Urban	Roof - 114m^2 (100% Imp.)	Area Impervious (ha)	None	None	0.011
Urban	Roof - 114m^2 (100% Imp.)	Area Pervious (ha)	None	None	0
Urban	Roof - 114m^2 (100% Imp.)	Total Area (ha)	None	None	0.011
Urban	Roof - 340m^2 (100% Imp.)	Area Impervious (ha)	None	None	0.034
Urban	Roof - 340m^2 (100% Imp.)	Area Pervious (ha)	None	None	0
Urban	Roof - 340m^2 (100% Imp.)	Total Area (ha)	None	None	0.034
Urban	Roof Terrace - 526m^2 (100% Imp.)	Area Impervious (ha)	None	None	0.053
Urban	Roof Terrace - 526m^2 (100% Imp.)	Area Pervious (ha)	None	None	0
Urban	Roof Terrace - 526m^2 (100% Imp.)	Total Area (ha)	None	None	0.053

Only certain parameters are reported when they pass validation

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Failing Parameters

Node Type	Node Name	Parameter	Min	Max	Actual
Sedimentation	Above Ground Basin	Notional Detention Time (hrs)	8	12	1.94
Sedimentation	SF Chamber 1350 x 2650	Notional Detention Time (hrs)	8	12	0.0633
Sedimentation	SF Chamber 1350 x 2650	Total Nitrogen - k (m/yr)	500	500	1
Sedimentation	SF Chamber 1350 x 2650	Total Phosphorus - k (m/yr)	6000	6000	1
Sedimentation	SF Chamber 1350 x 2650	Total Suspended Solids - k (m/yr)	8000	8000	1

Only certain parameters are reported when they pass validation

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1:150@A1 0 1 2 3 4 5 6 7
1:200@A1 0 1 2 3 4 5 6 7 8 9 10
1:100@A1 0 1 2 3 4 5

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No	AMENDMENT	ENG	DRAFT	DATE	No	AMENDMENT	ENG	DRAFT	DATE
A	FOR D.A. APPROVAL	N.L.	P.A.	25-07-18					

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PROJECT
PROPOSED RESIDENTIAL FLAT BUILDING
23-29 HARVEY AVE,
MOOREBANK, NSW

CONSENT AUTHORITY:
LIVERPOOL CITY COUNCIL

N

SHEET SUBJECT
MUSIC LINK REPORT

PROJECT 23-29 HARVEY AVE, MOOREBANK, NSW			
DATE JUL 18	DRAWN P.A.	DESIGNED N.L.	CHECKED N.L.
SCALE @ A1 NTS		JOB No 18NL157	
AUTHORISED NERMEIN LOKA		DWG No D08	REV A